THE LINGNAN INSTITUTE OF BUSINESS ADMINISTRATION

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A STUDY OF THE HONG KONG AIR CARGO TRANSPORTATION -- WITH EMPHASIS ON ITS COMPETITION WITH SEA TRANSPORT

by

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1.0 INTRODUCTION

1.1 Purpose

The first powered airplane flight was in 1903. However, it was only after the end of World War II that civil air transportation became important. Today it is an accepted mode of transportation and the progress in it has been most remarkable. During the last twenty years the impact of air transport on world economic life has been spectacular. Its growth has continued to this day.

The chief use of civil aircraft is for passenger transport. Seventy-five per cent of all the world's air traffic is devoted to passenger traffic. However, since the jet planes started full-scale operations about ten years ago, the growth rate of the volume of goods shipped by air has largely exceeded that of passenger traffic. From 1960 to 1969, the growth rate in the world air freight was eighteen per cent, while it was only fourteen per cent in passenger traffic (10, p. 9). In recent years, recession and inflation have caused financial difficulties for most international airlines. However, when looking at air cargo alone, the situation is much better. The world-wide air freight industry has maintained a high level of operations. Many in the world air transport industry believe that the annual air cargo growth rate for the year 1975 as a whole will prove equal to the sixteen per cent recorded the previous year (2). It is expected

ABSTRACT

Movement of merchandise by air cargo planes is the newest and fastest growing method of transportation. The present study was undertaken in order to determine the general condition of the Hong Kong air cargo industry, which has increased remarkably since World War II; look into its competition with sea transport, where speed is the greatest of air cargo's many advantages; and forecast its future development. The future of the air freight industry depends on (a) the changes of freight rates of air or sea transport, (b) the prospects of educating shippers about the benefits of air cargo, (c) the improvement in air transport services, (d) the Hong Kong trade volume and composition, and (e) the amount of foreign investment in Hong Kong.

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that from 1980 through 1985 the revenue from cargo transportation will replace the revenue from passenger transportation as the major income in the air transport industry.

Today movement of merchandise by air cargo planes is the newest and fastest growing method of transportation. Despite the world recession and increased fuel costs in recent years, the air cargo market in the Far East has remained reasonably strong. In Hong Kong the growth of air cargo has been impressive. Its growth rate is much higher than the growth rate of the total commercial cargo. In order to determine the present situation of the air cargo industry in Hong Kong, the present study was undertaken. The main purposes were:

(a) to determine the general condition of the Hong Kong air cargo industry,

(b) to look into its competition with sea transport, and

(c) to forecast its future development.

1.2 Scope of the Study

Air cargo transportation is the merchandise sold to users (shippers and consignees) by airline companies, their agents and air cargo forwarders. This merchandise has the utility of furnishing its user with time value and place value (10, p. 60).

Although both airborne exports and imports are concerned with air cargo transportation, our main effort is concentrated on air exports because the choice of transportation means is mainly made by exporters.

In this study, air cargo refers only to commercial air cargo that is transported by civil aircraft. The definition of air cargo that is used is "anything carried or to be carried in

an aircraft, other than mail or other property carried under the terms of an international postal convention or baggage (incl. personal effects accompanying a passenger) or the property of the carrier, provided that unaccompanied baggage moving under an air waybill is cargo" (1, book 1, 1974, p. 20).

1.3 Methodology and Limitation

Transportation is one of the subjects in marketing and economic geography. In most books in these fields, there are chapters about transport. A very general idea about different kinds of transportation was obtained by reading these books. Some articles in periodicals also discussed this subject.

After obtaining a general idea about air transportation in the world, a further step was taken by reading articles and reports about the Hong Kong air cargo transportation, such as the Hong Kong Annual Report, Departmental Report of the Civil Aviation Department and other air freight survey reports published by organizations in Hong Kong.

In this study both primary and secondary data are used. As secondary data was much cheaper and easier to obtain than primary data, all appropriate and useful secondary data that were available were collected and employed in this study. Only the data that could not be obtained from secondary sources were collected by taking our own survey.

Secondary data about Hong Kong air freight were obtained from Hong Kong Government departments, such as the Census and Statistics Department and the Civil Aviation Department, organizations like the Trade and Development Council, and private

companies like airlines and shipping companies.

Primary data for this study came from shippers, airlines, and air freight agents. Mail questionnaires were sent to selected shippers in order to draw useful data. This is the main body of primary data in this study. Opinions and information from airlines and shipping companies were obtained by in depth interviews.

1.4 An Overview of Succeeding Chapters

In addition to this introductory chapter, there are six other chapters in this thesis. Chapter 2.0 looks into the development of the Hong Kong air cargo industry in comparison with the development of Hong Kong trade. The structure of the air freight industry is presented in Chapter 3.0, which presents the functions of airlines and air freight agents, and the air cargo handling system in Hong Kong. Chapter 4.0 gives a detailed comparison between the advantages and disadvantages of air transport and sea transport. Chapter 5.0 looks into Hong Kong airborne exports -- that is, the commodities that are transported by air and their destinations. From this we obtain a general idea about the reasons for using air transport. Then the results of a survey to determine shippers' opinions about air transport and their reasons for choosing different kinds of transportation means are presented in Chapter 6.0. Conclusions and recommendations about the Hong Kong air cargo industry are presented in Chapter 7.0.

2.0 THE DEVELOPMENT OF HONG KONG AIR CARGO TRANSPORTATION

2.1 Development of Airport

In 1924 a grass area of approximately 400 yards by 300 yards situated at Kai Tak on the north shore of Kowloon Bay was used by a private flying club. Two years later an airfield at this site was under construction by the Hong Kong Government and was opened in 1930 with an area of fifty acres (8, 1974, p. 135). In 1938 it was enlarged to 171 acres. However, there were still no runways at that time. During the Japanese occupation its area increased to 376 acres and two concrete runways were laid. One of these runways was 4,580 feet long by 330 feet wide, while the other was 4,730 feet long by 225 feet wide (7, 1946-47, p. 1). During the war years the whole concept of air travel changed. After World War II the airport in the Colony of Hong Kong was enlarged continuously. The two runways were unsuitable. In 1952/53 a single runway was provided at Kai Tak to meet all future operational requirements, including those associated with the jet age. Construction of the runway (7,200 feet by 200 feet) began in 1953 and completed in 1958. It was lengthened several times later. Besides the runway, the initial development of terminal buildings and associated ancillary buildings also took place. Today Hong Kong Kai Tak International Airport with an area of more than 530 acres and a runway of 11,130 feet

is one of the major international airports in the world and forms an important link in the main air routes of the Far East (8, 1974, p. 135) (Appendix A & B).

2.2 Development of Operating Airlines

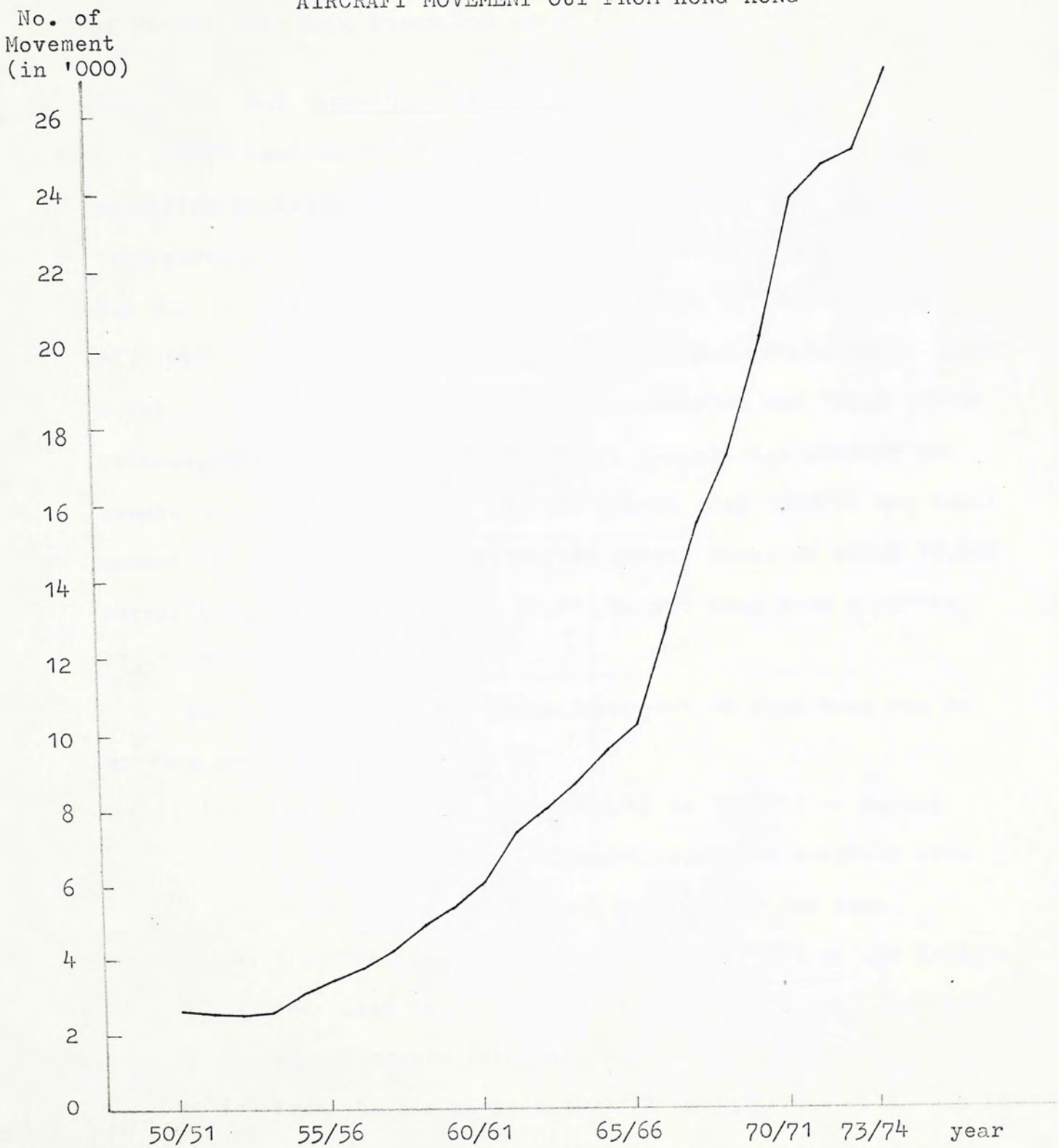
It has been a policy in the past of the Hong Kong Government to encourage all aviation activities in the Colony, with the result that Hong Kong has become the centre of aviation in the Far East.

In May 1946 the only civil airline operating in Hong Kong was the China National Aviation Corporation. With twenty-four arrivals it brought only 475 passengers into Hong Kong in that month. By March 1947 the scheduled services operation airlines increased to three. They were British Overseas Airways Corporation, Central Air Transport Corporation and China National Aviation Corporation. Seven other airlines also used the airport with varying regularity for unscheduled and charter flights (7, 1946-47). At that time air flights and routes were limited. The places that were linked with Hong Kong by air services were only major cities in China, South East Asia, and the United Kingdom.

In 1948 there were thirteen scheduled and several non-scheduled operators handling 7,309 aircraft movements in and out of Hong Kong during that year (7, 1947-48). Today the number of the operating airlines, aircraft movements, and ports linked with Hong Kong has increased. At the end of 1974, there were thirty scheduled airlines operating 992 scheduled services a week to and from Kai Tak. Hong Kong was linked by direct flight to sixty-five major world cities. In addition to the scheduled airlines,

FIG 2.1

AIRCRAFT MOVEMENT OUT FROM HONG KONG



Source: Appendix C

there were some twenty-five non-scheduled carriers operating an average of eighty services per week. This made the 54,162 annual aircraft movements in the year ending March 31, 1974, of which 2,685 were scheduled cargo flights (7, 1973-74).

2.3 Growth of Air Cargo Transportation

With continuous development in Hong Kong's economy, airport, operating airlines, air routes, and aircraft movements, air cargo transportation in Hong Kong has increased remarkably since World War II. In the year after the war, that is, the year ending March 31, 1947, the total air freight was only 257.9 metric tons. This total was made up of 155.8 metric tons imported and 102.1 metric tons exported (7, 1946-47). Today air freight has already exceeded 100,000 metric tons. In the fiscal year 1973/74 the total amount of aircraft cargo was 100,721 metric tons, of which 39,603 metric tons were imported and 61,117 metric tons were exported (7, 1973-74) (Appendix D).

The growth of the air cargo transport in Hong Kong can be divided into three periods.

(a) From the fiscal year 1951/52 to 1961/62 -- During these ten years air freight increased slightly with an average annual growth rate of 8.2 per cent.

(b) From the fiscal year 1961/62 to 1971/72 -- Air freight increased very rapidly within this period. Its average annual growth rate was 29.9 per cent.

(c) From the fiscal year 1971/72 to 1973/74 -- Although the amount of air cargo still increased, it showed a decrease in growth rate in this period. The average

annual growth rate was only 13.5 per cent. This slow-down in growth rate was mainly due to the slow increase of airborne exports during these two years.

Before the year 1972 exported air cargo had increased more rapidly than that imported. In the fiscal year 1946/47, air cargo that was carried in and out of Hong Kong was at the same volume, but in 1971/72 exported air cargo was more than twice of that imported. However, in the past two years the growth of exported air cargo tonnage has slowed down, while air imported tonnage still has grown at a rate of 28.0 per cent.

TABLE 2.1

INTERNATIONAL AIR FREIGHT OF HONG KONG
(Weight in Metric Tons)

Year	In	Average annual growth rate	Out	Average annual growth rate	Total	Average annual growth rate
51-52	1,135.5	-	1,475.3	-	2,610.8	-
61-62	1,924.9	5.4%	3,806.9	10.0%	5,731.8	8.2%
71-72	24,199.0	28.8%	54,011.2	30.4%	78,210.2	29.9%
73-74	39,603.5	28.0%	61,117.6	6.3%	100,721.1	13.5%

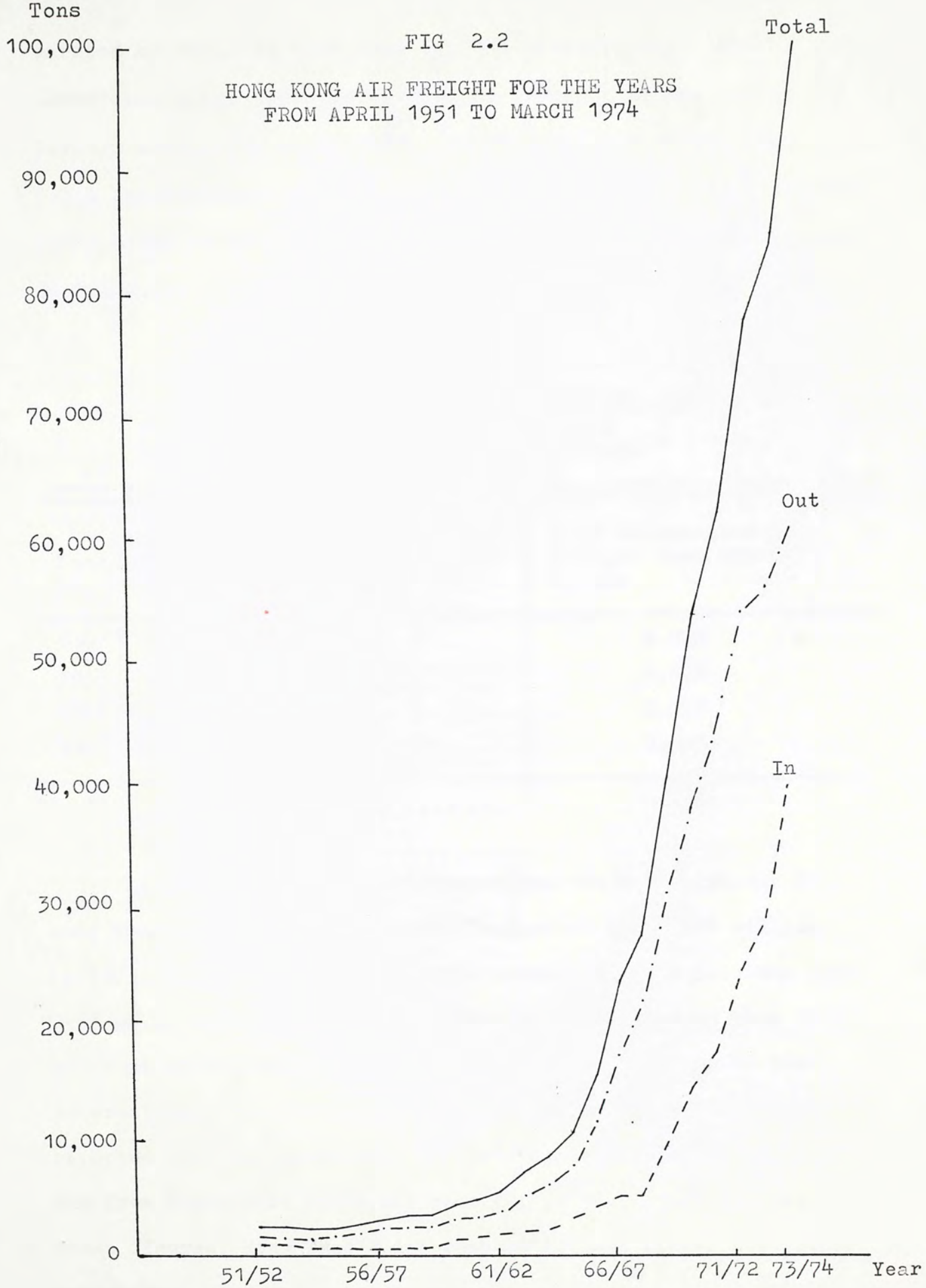
Source: Appendix D

2.4 Penetration of Air Transport in the Carriage of Goods

Besides the rapid growth of Hong Kong's external trade, the improvement in air services and aircraft schedules contributed greatly to the development of the air freight industry. In 1947 only 0.02 per cent of the total external trade in tonnage was

FIG 2.2

HONG KONG AIR FREIGHT FOR THE YEARS FROM APRIL 1951 TO MARCH 1974



Source: Appendix D

carried by air. As time went by, the proportion of international commercial cargo that was carried by aircraft became larger and larger, especially after 1963. In 1963 about 0.07 per cent of the total international freight traffic was carried by air while ten years after -- in 1973 -- this precentage increased to 0.50 per cent (Table 2.2).

TABLE 2.2

PENETRATION OF AIR TRANSPORT IN HONG KONG'S EXTERNAL TRADE BY WEIGHT
(Weight in 1,000 Metric Tons)

Year	Total Freight	Air Freight	% of International Freight that Carried by Air
1947	4,021	1	0.02%
1953	5,093	2	0.04%
1963	10,973	8	0.07%
1973	19,140	96	0.50%

Source: Appendix E

In terms of value, air penetration was much higher. Of Hong Kong's total external trade, valued at HK$55,004 million in 1973, 16.8 per cent was by air freight (Table 2.3). The percentage is even higher for exports. Airborne exports were 17.3 per cent of the total exports (Table 2.4). According to the International Civil Aviation Organization (ICAO), its members reported that the proportion of their trade carried by aircraft was from 2 per cent to 14 per cent (9, p. 3). When compared to these figures, Hong Kong's air penetration was higher than other countries.

TABLE 2.3

PENETRATION OF AIR TRANSPORT IN HONG KONG'S EXTERNAL TRADE BY VALUE
(Value in HK$million)

Year	Total Freight	Air Freight	% of international freight that carried by air
1969	28,090.1	4,147.5	14.8
1970	32,844.8	5,301.8	16.1
1971	37,420.4	5,917.6	15.8
1972	41,163.5	6,616.8	16.1
1973	55,004.0	9,218.0	16.8

Source: Appendix F

TABLE 2.4

PENETRATION OF AIR TRANSPORT IN HONG KONG'S EXTERNAL TRADE IN 1973 BY VALUE
(Value in HK$million)

	Total Freight	Air Freight	% of international freight that carried by air
Import	29,004.6	3,964.5	13.7
Export	19,474.4	3,364.4	17.3
Re-export	6,525.0	1,889.1	30.0
Total	55,004.0	9,218.0	16.8

Source: Appendix F

3.0 THE STRUCTURE OF THE AIR CARGO INDUSTRY

3.1 International Organizations

International Civil Aviation Organization (ICAO)

The ICAO was formally established in 1947 as an international managerial structure among nations. Currently, the number of member countries is 124 (12). It is one of the United Nations subsidiary agencies and has the following objectives.

(a) To insure the safe and orderly growth of international civil aviation.

(b) To encourage the arts of aircraft design and operation for peaceful purposes.

(c) To encourage the development of airways, airports, and air navigation facilities for international civil aviation.

(d) To meet the needs of the peoples of the world for safe, regular, efficient and economical air transport.

(e) To prevent economic waste caused by unreasonable competition.

(f) To ensure that the rights of contracting states are fully respected and that every contracting state has a fair opportunity to operate international airlines.

(g) To avoid discrimination between contracting states.

(h) To promote safety of flight in international air navigation.

(i) To promote generally the development of all aspects of international civil aeronautics (12).

International Air Transport Association (IATA)

The IATA is an organization that aviation companies of various countries belong to. Its objectives are the following:

(a) To promote safe, regular and economical air transport for the benefit of the people of the world and to foster air commerce and to study the problems connected therewith.

(b) To provide the means for collaboration among the air transport enterprises engaged directly or indirectly in international air transport services.

(c) To co-operate with ICAO and other international organizations (10, p. 16).

3.2 Airline Company

Aircraft are the only machines that can operate over both land and sea. Although they are able to move anywhere, no one can freely fly aircraft today. The location of airports and the position of ground navigational aids hold commercial aircraft to well-defined tracks. Besides, each state has complete and exclusive sovereignty over the air space above its territory. The right to operate over foreign territories is a matter for negotiation between the interested parties.

In 1974 there were thirty scheduled and twenty-five non-scheduled airlines were operating in Hong Kong. Scheduled airlines are those that provide regular services. In 1974 these thirty scheduled airlines provided 992 scheduled services a week

to and from Hong Kong. The twenty-five non-scheduled airlines also provided an average of eighty services per week (7, 1973-74). Hong Kong is linked to sixty-five major world cities by direct flight.

The greater bulk of air cargo is concentrated in the hands of the large air freight carriers. In fiscal year 1972/73, the top five airline companies handled sixty-one per cent of the total tonnage carried by scheduled airlines. In the same period the top five non-scheduled operators also handed seventy-six per cent of the cargo in this field (9, p. 9).

Among these scheduled and non-scheduled airlines, most were carriers of both passengers and cargoes. Only a few of them were all-cargo airlines. Among the total of 54,162 aircraft movements in the financial year 1973/74, 2,685 were scheduled cargo flights.

In air cargo industry, the major function of airlines is to transport goods from shippers to cansignees by air. Airlines provide two kinds of transportation service.

(a) Airport to airport -- Airline companies only transport consignments by air between airports or other landing places at or near the cities to which the consignments are shipped. Shippers have to transport the cargo from the godowns to the airport and consignees have to pick up the cargo at the airport.

(b) Door to door -- Airline companies provide complete pickup and delivery service. Airline companies pick up the cargo at the factories, carry it to the airport, load it on the plane, transport it to other airport by air, and deliver it to the door of the

consignees.

Besides the transportation function, airlines also provide other services.

(a) Transshipping and reforwarding -- Airlines may transship or reforward cargo by other transportation services, or return cargo to the point of origin at the request of the shipper. Charges are required for this service.

(b) Unit load devices -- Unit load device is any type of container in which a consignment can be transported. Unit load devices that are owned by airlines will be rented to shippers or consignees at the airport of origin or the airport of destination for loading or unloading the cargo. Usually there is no charge within forty-eight hours, but thereafter demurrage is assessed at the rate of US$50 per one unit load device for a day.

(c) Packing -- Airlines will repair packing materials or repack the shipments which are damaged during carriage. Costs will be charged to the shipper or the consignee.

(d) Storage -- Airlines provide storage for the cargo at the airport of destination. The cargo should be taken away within forty-eight hours from 8:00 a.m. of the day following the day of its arrival. Otherwise there will be a charge for storage.

(e) Cash on delivery -- Under the agreement between the shipper and airlines, airline companies may collect

from the consignee the amount indicated on the air waybill as payable to the shipper. C.O.D. service charge is four per cent of the C.O.D. amount with the minimum charge of US$10.00. This service can be utilized for the carriage of cargo between many cities, but some countries do not accept this service.

(f) Disbursement -- Disbursements are charges which an airline collects from the consignee at the airport of destination other than transportation charge, C.O.D. service charge, and C.O.D. amount.

(g) Insurance -- Airline companies provide insurance upon request under air waybills issued by them. Shippers may obtain this if they request it at the time of shipment. Insurance premium rates are different among different airline companies.

3.3 Air Freight Agents

In Hong Kong there are about eighty air freight agents. These agents handle over ninety-five per cent of all the air freight business.

The air freight agents in Hong Kong usually preform two major functions.

(a) The air freight agents act as agents for the airline in offering air cargo service to the airline customers. In accordance with the airline's transportation clauses, regulations, tariffs, schedules, etc., the air freight agents sell air transport services, issue air waybills, collect freight from shippers, and provide related

business services on a commission basis. The agents' commission rate is five per cent of the air cargo freight charges.

(b) The air freight agents act as cargo consolidators that make transportation agreements with individual shippers under their own tariff and transportation clause. In this respect, they act like an airline company. Because the air freight agents have no airplane, they have to transport the cargo they consolidate by aircraft that belong to airline companies under the airline's transportation clause. In this respect, the air freight agents act like airline customers. They generally accept transportation of cargo from shippers at a freight rate lower than those of the airlines. Then they consolidate the cargo into a large consignment and forward it to the airline. Thus, they may receive a reduced freight rate offered to large cargo. The profits that they receive are the difference between the freight rate they offer to the shippers and the rate they pay to the airlines. There is a break bulk agent designated at the destination as a consignee. When the consignment arrives, the break bulk agent receives the consignment and delivers individual cargo to the consignees. Any cargo that has to be transferred for further transportation is transferred accordingly. More than fifty per cent of the Hong Kong air freight agents' business involves handling consolidated shipments (9, p. 11).

Besides these two major functions, air freight agents also provide other services.

(a) Collection and distribution of shipments -- Air freight agents provide pickup and delivery services to their customers. They pick up cargo at factories and deliver it to the airport. The cartage charge is about US$0.072 per kilogram.

(b) Documentation -- They help customers fill in air waybills and other documents.

3.4 Air Cargo Handling System

According to the route of transportation, exported cargo is divided into two types.

(a) Straight cargo -- Cargo which is forwarded by the shipper to the airline directly or through its agent. The cargo will be transported under the transportation contract concluded between the shipper and the airline.

(b) Consolidation cargo -- Cargo which is consolidated into a large consignment by air freight agents before exported abroad. Before the cargo is transported, the individual shippers have to conclude a transportation contract with air freight agents on individual cargo in compliance with the cargo consolidator's tariffs and regulations. The freight rate for this cargo is lower than that of straight cargo, but the time required is also longer than that of straight cargo.

Once a shipper decides to export his cargo by air, he may contact the airlines directly or through air freight agents. In Hong Kong most shippers contact air freight agents, whether the shipper wants to export his goods in the way of straight cargo or consolidation cargo. The air freight agent will find the suitable airline and flight, and help to fill out air waybills and other documents. Then, the air freight agent will pick up the goods at his factory and deliver it to the airport once the goods are ready. When the cargo arrives at the airport, it will be loaded on the airplane. There are three modes of loading:

(a) Bulk loading -- Bulk refers to loose cargo. These cargoes are individually packed and are usually loaded into the cargo compartment by hand. Almost all belly compartments of aircrafts are utilized for accomodating bulk cargo.

(b) Pallet loading -- The use of pallet may save loading time. "A pallet is made of plywood sandwiched with hard boards with four edges lined with aluminum. The pallet with cargo stacked on it is slid into the airplane with the lift loader and the roller bed installed on the floor of the cargo compartment and locked at a proper position" (10, p. 265).

(c) Container loading -- Goods are put into containers which are exactly fitted to the cargo compartment.

With mechanized facilities, it takes less than thirty minutes to load one DC-8 or even a B-747.

4.0 THE ADVANTAGES AND DISADVANTAGES OF AIR TRANSPORT WHEN COMPARED WITH SEA TRANSPORT

4.1 Time

Transportation time

Speed is the great asset of air transport. Many places previously reached by days or weeks of travel are now within a few hours' journey if air transport is used. Jet aircraft move at speeds more than twenty times quicker than ocean vessels. Modern containerships cruise at speeds of about twenty knots (11, p. 14), while jet aircraft on regular services move at speeds of hundreds of miles an hour. Table 4.1 shows the flight speed of different types of aircrafts.

TABLE 4.1

FLIGHT SPEED OF AIRCRAFTS
(Unit in mile per hour)

Type of Aircraft	Flight Speed
DC3	170
DC4	200
DC6A	270
DC7F	310
DC8F	525
B707-320C	530
B747F	533

Source: 10, p. 39

Because of the high speed of aircraft, all major cities in the world can be reached within a few hours. Compared with sea transport which takes days and weeks to the same places, air transport gains an advantage. This quick transport enables shippers to export goods which require high transportation speed, such as high fashion clothing and perishable items. It also enable shippers to have quicker capital turnover.

TABLE 4.2

TRANSPORTATION TIME REQUIRED BY SEA TRANSPORT
(Unit in month)

Destination	Transportation Time Required
U.S.A.	1 1/2 - 2
Central America	2
Northern Part of South America	2
Europe	2
Red Sea	1 3/4

Source: Interview with a shipping company in January 1975

Loading time

Goods to be loaded on board a cargo ship vary in shape and volume. Thus, it requires lots of time and labour to load these cargoes. Generally speaking, it requires ten days to load 10,000 tons of goods on board an ordinary cargo liner. Loading time is much shorter if container ships are used. It requires only two to three minutes to load one container on board. However, as a large container ship may carry 2,000 containers, it requires

about four days to load one container ship. In air transport, loading time is less. The giant 747 aircraft can only carry 200,000 pounds of goods. Thus, it is easy to load one aircraft. With the help of mechanized facilities, it requires only thirty minutes to load one of these aircrafts. Because of the short loading time, aircraft may leave Hong Kong much earier than ocean vessels do.

Schedules

Air transport provides more frequent departures than sea transport does. There are aircraft that leave Hong Kong and go to almost all major cities in the world. Thus, shippers may export their goods on the day they like. However, sea transport does not provide such a frequent schedule. Generally, shippers have to wait days or weeks for a suitable vessel.

Accurate in arrival time

Air transport provides more accurate arrival time than sea transport does. Delay of shipments in air transport is generally in minutes or hours. Sea transport cannot provide accurate arrival time. In many cases, even the exact arrival day is not known.

4.2 Cost[1]

Direct transportation charges

It is a costly process to put an aircraft in the air and to provide all the backing services. The research and construction of an aircraft cost millions of pounds. Also, fuel con-

[1]The costs cited in this chapter are the rates generally prevailing at the beginning of 1975.

sumption is high, and the payload capacity of an aircraft is relatively small. The capacity of the giant 747 Freight Master is 200,000 pounds, or 25,500 cubic feet (3), while the total capacity of a container ship of the 15,000 ton class is 960,000 cubic feet (10, p. 38). Because the operating costs of aircraft increase in almost direct proportion to size, there are fewer economics of scale to be realised than with ships. For all These reasons, the air freight transportation costs are five to twenty times more than sea transportation costs.

The world is divided into three areas by Traffic Conference under IATA (International Air Transport Association). The rates, charges and rules for air transportation are closely related with IATA areas. Airlines which are the members of IATA have to use the cargo rates that are fixed by IATA. Air freight rates are based on the commodity or material being shipped, and the distance involved. There are four types of cargo rates.

(a) General cargo rates -- They apply to any commodity acceptable for carriage.

(b) Specific commodity rates -- They are provided for particular commodities from a specified point of origin to a specified destination point. They are lower than general cargo rates and are subject to a minimum weight. In Hong Kong specific commodity rates are provided for clothing, electronics, and plastic products.

(c) Commodity classification rates -- They are provided for a few commodities. They may be higher or lower

than general cargo rates.

(d) Unit load device charges -- They apply to shipments loaded by shippers in containers or on pallets.

Air transportation charges are based on weight or volume with a sliding scale of rates which provide lower unit charges as the weight or bulk of an shipment increases from minima. Weight or volume charge means the charges obtained by multiplying actual gross weight (or volume) by the applicable rate. The unit of chargeable weight is a half kilogram or one pound. Fractions of a half kilogram will be charged as the next higher half kilogram. Fractions of a pound will be charged for at the next higher pound. A consignment whose cubic measurements exceed 7,000 cubic centimeters per kilogram will be assessed on the basis of one kilogram for each 7,000 cubic centimeters. If the consignment is measured in pounds, a consignment whose cubic measurement exceeds 194 cubic inches per pound will be assessed on the basis of one pound for each 194 cubic inches. Fractions thereof are rounded to the next higher unit. Table 4.3 shows some examples of air cargo rates. These rates and charges cover only the carriage of consignments by air between airports.

Ship transport provides shippers with much cheaper direct transportation charges than airlines. The sea transportation charge is generally based on cubic measurement. This charge is obtained by multiplying the cubic measurement of the consignment by the applicable rate. The consignments are usually measured in cubic feet. Table 4.4 shows some examples of sea freight rates. These rates cover the carriage of consignments by sea between

wharves or harbours at the points shown in the published rates.

TABLE 4.3

AIR CARGO RATES FOR SHIPMENTS FROM HONG KONG
IN JANUARY 1975
(Unit in U.S. Dollar Per Kilogram)

Destination	General Cargo Rates For Consignment of 45 Kg.
East coast of U.S.A.	4.19
West coast of U.S.A.	3.84
London	4.46
Oslo	4.81
Hamburg	4.54
Genoa	4.25
Tokyo	1.35
Singapore	1.08

Source: Interview with an airline company in January 1975

Storage charge

In Hong Kong land is very expensive. Thus, it is hard to find a place to store goods. The high costs of both the labour in keeping control of the stored goods and the land make storage cost high in Hong Kong. Storage charges vary greatly among different kinds of warehouses. The storage cost for general cargo is about Hong Kong fifty cents per cubic foot per month. Exported goods manufactured in a factory are kept in storage until they are shipped. Because aircraft fly daily to almost all major cities in the world, storage may not be required if air transport

is used. Unlike air transport, sea transport cannot provide such frequent schedules. Thus, goods must be kept in storage, depending on the schedules of ships if sea transport is used.

The labour fee for handling cargo in and out of warehouses is also a cost due to storage. This charge is about HK$0.8 per cubic foot. If air transport is used, storage is generally not required. Thus, there is no need to handle goods in and out of warehouses. However, if sea transport is used, this handling cost must be counted as part of the cost to shippers.

TABLE 4.4

SEA FREIGHT RATES FOR SHIPMENTS FROM HONG KONG
IN JANUARY 1975
(Unit in U.S. Dollar Per Forty Cubic Feet)

Type of Cargo	Destination		
	East coast of U.S.A.	West coast of U.S.A.	*European Ports
Cotton/Polyester goods	67.75	60.24	68.95
Plastic toys	58.00	49.75	61.45
Plastic flower	53.75	46.00	68.95
Radio goods	67.50	57.00	81.90
Hardware	77.75	62.50	68.95
Enameiware	69.25	59.75	63.00
Chinese merchanise	69.75	62.25	68.95
Straw mats	56.70	46.50	40.05
Cotton waste	56.25	49.50	50.00
Rubber sandals	55.25	52.75	66.05

*The total freight rate should include:
BAF (Bunker Adjustment Factor) 21.22%
CAF (Currency Adjustment Factor) 19%

Source: Interview with a shipping company in January 1975

Loading cost

The cargo rates and charges that are quoted by airline companies or shipping companies do not include the cost of transporting cargo from factory or warehouse to aircraft or ocean vessels. Shippers must transport their exported cargoes to the airport or wharves by themselves or have their agents do this.

The cartage fee that is charged by Hong Kong air cargo agents is about US$0.072 per kilogram. This fee covers the carriage of consignments from the place of storage to Kai Tak Airport. If sea transport is used, the cargo must be transported from godowns to vessels in the habour. The cartage fee is about HK$0.80 per cubic foot. One cubic foot is about seven pounds net weight.

Packing cost

Goods shipped by sea may be packed in wooden cases, barrels, cartons or bags. As air transport requires less transportation time and provides better care than sea transport does, wooden cases are generally not needed. Only goods that need extra care, such as glass and chinaware, need to be packed in wooden cases. Generally speaking, goods shipped by air are packed in cardboard. This kind of packing may cost less. With the modified igloos used in air transport, ready-to-wear fashions can be carried hanging to save packing. The fashions can be priced and coded at the factory in Hong Kong and sent right to the showroom in foreign countries. As a result, time is saved.

Insurance charge

Shippers have to insure their cargoes. If the goods are transported by air, the amount to be insured should be equal to

the shipper's declared value for carriage on the air waybill. There are slight difference in the insurance premium rates among different airline companies. Table 4.5 is the insurance premium rate table of Japan Air Lines.

TABLE 4.5

INSURANCE PREMIUM RATE OF JAPAN AIR LINES
(Unit in U.S. Dollar Per US$100 of value)

Under 45 Kgs. general cargo rate	General cargo	Valuable cargo	Live animal
US$ up to 0.50	0.14	0.14	5.00
0.51-2.00	0.24	0.24	5.00
2.01-5.50	0.30	0.30	5.00
5.51 and over	0.40	0.40	5.00

Source: 1

Insurance charges for cargo that is exported by sea are generally higher than those for cargo that is exported by air because sea transport requires longer time and involves higher risk. If cargoes are transported by sea, shippers may insure their cargoes through insurance companies. Marine insurance rates are usually determined by the following factors:

(a) Coverage

(b) Character of goods

(c) Type of shipping package used

(d) Scope of voyage

(e) Vessel

In Hong Kong, the marine insurance premium rate is about

US$0.40 to US$1.50 per US$100.00 of value.

The insurance charges for both air and sea transport that are listed above covers the usual types of perils. It excludes coverage for delay, deterioration or loss of market, war riots, capture, seizure, civil commotion and similar perils.

Cost analysis

Although air transport has a higher direct transportation charge, the indirect transportation costs are less, such as packing cost, storage cost, loading cost and insurance charge. Since air transport requires less transportation time, it has a quicker capital turnover than sea transport does. Thus, comprehensive cost analysis should be applied to both air and sea transport in order to find the actual cost of these two transport methods.

Table 4.6 shows an example of a comprehensive cost analysis. This example is not intended to indicate one mode of transportation is more diserable or less diserable for the commodities indicated, but simply to illustrate the various elements in a comprehensive cost analysis. This is a cost analysis of a shipment of clothes based on the following assumptions.

(a) The gross weight of the shipment is 300 kilograms.

(b) The cubic measurement of the shipment is eighty cubic feet.

(c) The FOB price is US$4,000.

(d) The shipment is exported from Hong Kong to New York.

(e) The time required for air transportation is three days. The time required for sea transportation is forty-five days.

(f) In sea transport it takes ten days to wait for the suitable vessel, while in air transport the shipment can be exported on the day the shipper likes.

(g) The payment of the goods is received when the goods arrive New York.

(h) US$1.00 = HK$5.00

With these assumptions, different kinds of costs are calculated. The costs include freight charge, loading cost, storage cost, packing cost, insurance, and also interest loss during transportation.

(a) Freight charge -- In air transport, the freight rate for the shipment of clothes of 300 kilograms is US$2.61 per kilogram. In sea transport, the freight rate for shipment of clothes is US$67.75 per forty cubic feet.

Air transport US$2.61 X 300 = US$783.00

Sea transport US$67.75 X 80/40 = US$135.50

(b) Cartage charge -- In air transport, an air freight agent charges US$0.072 per kilogram for cartage charge with a minimum charge of US$1.50. In sea transport, the charge for cartage from warehouse to vessel is HK$0.80 per cubic foot with a minimum charge of HK$160.00.

Air transport US$0.072 X 300 = US$21.60

Sea transport HK$160.00/5.00 = US$32.00

(c) Storage cost -- If air transport is used, no storage is needed. If sea transport is used, the goods have to be kept in a warehouse for ten days. The storage

cost is assumed to be HK$0.50 per cubic foot per month. Thus, the storage cost for this shipment will be US$2.67.

Sea transport $\frac{\text{HK\$0.50 X 80}}{5.00} \times \frac{10}{30} = \text{US\$2.67}$

(d) Handling cost -- The labour fee for handling goods in and out of a warehouse is about HK$0.80 per cubic foot. If air transport is used, no storage is needed. Thus, there is no need to handle goods in and out of a warehouse. If sea transport is used, the labour cost for handling goods is US$12.80.

Sea transport $\frac{\text{HK\$0.80 X 80}}{5.00} = \text{US\$12.80}$

(e) Packing cost -- In Hong Kong, most goods are packed in almost the same way no matter if they are exported by sea or air. In this example, we assume that the goods are packed in cartons in both cases. These cartons cost HK$1.50 per 1,000 square inches.

(f) Insurance -- In air transport, the insurance rate is US$0.40 per 100 U.S. dollars of value. In sea transport, the insurance rate varies greatly. We assume that it is US$0.70 per 100 U.S. dollars of value.

Air transport $\frac{\text{US\$4,000}}{\text{US\$100}} \times \text{US\$0.40} = \text{US\$16.00}$

Sea transport $\frac{\text{US\$4,000}}{\text{US\$100}} \times \text{US\$0.70} = \text{US\$28.00}$

(g) Interest during transportation -- In 1974, the annual interest rate of bank loan in Hong Kong varied from 9.75 per cent to 12.00 per cent. In this example,

the annual interest rate is assumed to be 11.00 per cent. If air transport is used, three days are needed to transport the goods from Hong Kong to New York. If sea transport is used, it takes forty-five days for transportation and ten days for waiting for the suitable vessel.

Air transport US$4,000 X 11% X 3/365 = US$3.62

Sea transport US$4,000 X 11% X 55/365 = US$66.30

Based on the above calculation, the comparison between air and sea transport is shown in Table 4.6.

TABLE 4.6

COST ANALYSIS OF A SHIPMENT OF CLOTHES FROM HONG KONG TO NEW YORK
(Unit in U.S. Dollar)

	Air	Sea
Freight charge	783.00	135.50
Cartage charge	21.60	32.00
Storage cost	-	2.67
Handling cost	-	12.80
Packing cost	10.00	10.00
Insurance	16.00	28.00
Interest during transportation	3.62	66.30
Total	834.22	287.27

4.3 Service

Care

Air transport may provide better handling of cargo than sea transport does. Thus, goods which are fragile and service sensitive -- such as watches and clocks -- are usually transported by air.

Documentation and procedure

Documentation, permits and other paperwork should be completed before goods are shipped abroad.

In air cargo transport, air waybill is the most basic document. Consignors are required to fill the air waybill and hand it over to the airline companies. However, air freight agents usually fill in the air waybill for their customers. Both air freight agents and airline companies may help the consignors acquire permits and complete other paperwork.

Just as the air waybill is for air transport, the bill of lading is the most basic document for sea transport of goods. The bill of lading together with the shipping order and mate's receipt are filled in by shippers. Shippers are also required to acquire permits, effect marine insurance, and complete other paperwork by themselves.

If a shipper wants to export his goods by sea, he has to directly contact shipping companies and fill in the shipping order and bill of lading by himself. Then these documents are handed over to the shipping company. After the shipping company has received these papers, the shipper may ask a transport company to transport the goods from the factory to the dock of the shipping company or to the ocean vessel once the vessel is in the

harbour. There he gets the mate's receipt. When he returns this mate's receipt to the shipping company, he may get his bill of lading.

The procedure of exporting cargo by air is simpler than that of sea cargo transport. When a shipper wants to export his goods by air, he may find an air freight agent to help him. The air freight agent will help him contact airlines, complete the air waybill, collect the goods, and transport the goods to the airport for loading on the plane. The air freight agent only charges him for cartage. No other service charges are needed.

Cash on delivery (C.O.D.)

C.O.D. means an arrangement between the shipper and carrier whereby the latter, upon delivery of the consignment, is to collect from the consignee the amount indicated as payable to the shipper.

This service is provided by airlines for the carriage of air cargo between many cities. C.O.D. service charge is four per cent of the C.O.D. amount, with the minimum charge of US$10.00.

Communication systems

In some airline companies, there are airfreight communications systems for keeping track of cargoes. Shippers may determine the status of their shipments in minutes.

4.4 Points of Call

Aircraft may call inland cities directly. Thus, when the ultimate destination overseas is in some remote inland area, air transport may be convenient. In this case, no trans-shipment is needed if air transport is employed. Even though ocean trans-

portation to the nearest port may be frequent and rapid, internal transportation may be irregular, slow, and expensive. Thus, much time may be needed if sea transport is used.

5.0 THE AIRBORNE EXPORTS IN HONG KONG

5.1 Types of Commodities

Hong Kong's trade by air shipment in 1973 was valued at HK$9,218 million (4, 1973), or 16.8 per cent of the total value of trade by all methods of transport. About HK$3,364 million of this airborne trade was exports. This accounted for 17.3 per cent of the total exports in Hong Kong. When compared to 17.6 per cent in 1972, 18.6 per cent in 1971, and 20.6 per cent in 1970 (4, 1971 and 1972), there was a gradual decline.

Because of the speed and the high transportation charges of aircraft, shippers generally consider that air transport is suited to carry merchandise of high value but relatively low weight and bulk; and perishable goods such as foodstuffs, plants and flowers. However, there is a slight difference in statistics on the items airfreighted from Hong Kong to overseas countries.

Table 5.1 is an analysis of the movements of commercial goods transported by air from Hong Kong. In international air freight the items sent by air because of perishability, such as foodstuffs and fresh fruits, are not seen. This is because Hong Kong exports very little of these commodities.

Clothing, which was the most important export product of Hong Kong, was also the leading air export. In terms of value, it accounted for 35.6 per cent of the total exports by air in 1973. Other air-exported goods, such as electrical machinery

TABLE 5.1

INTERNATIONAL AIR FREIGHT BY ITEMS OUT OF HONG KONG
(Unit in percentage by value)

Items	1970	1971	1972	1973
Clothing (except fur)	27.5	35.6	40.4	35.6
Other electrical machinery and apparatus	20.3	20.8	26.1	29.0
Miscellaneous manufactured articles	35.9	20.3	8.6	3.8
Watches and clocks	3.5	4.9	5.6	7.2
Jewellery & goldsmiths' & silversmiths' wares	2.7	3.6	4.8	7.0
Telecommunications apparatus	2.2	4.1	3.5	3.5
Pearls, precious and semi-precious stones	2.3	3.1	3.0	3.2
Perambulators, toys, games and sporting goods	1.6	2.5	1.4	1.2
Others	4.0	5.1	6.6	9.5
Total	100.0	100.0	100.0	100.0

Source: Appendix G

and apparatus, watches and clocks, telecommunications apparatus, and toys also were important items in Hong Kong's overall exports.

From 1970 to 1973, there was increased use of air-freight in the exports of electrical machinery and apparatus, watches and clocks, and jewellery. In terms of value, in 1970 air freight in electrical machinery and apparatus accounted for 20.3 per cent of the total air exports and 29.0 per cent in 1973. The percentage for watches and clocks increased from 3.5 per cent in 1970 to 7.2 per cent in 1973, and the percentage for jewellery increased from 2.7 per cent in 1970 to 7.0 per cent in 1973.

The air penetration for each product was different. Clothing, the leading commodity in air exports, had a comparatively low air penetration. The value of clothing exports by air represented only 18 per cent of total clothing exports in 1972. However, in other products, especially those of high value and low bulk, the portion of exports delivered by air was high. The most significant items were electronic machinery and apparatus (86.3 per cent), watches and clocks (74.5 per cent), pearls, precious and semi-precious stones (94.6 per cent), and wigs (95.7 per cent) (Table 5.2).

5.2 Countries of Call

The percentages of air exports vary greatly according to markets. The most important markets for Hong Kong's air exports are the United States, the United Kingdom, West Germany, Japan, and Singapore. These countries also are the most important markets for Hong Kong's total exports. Of all the major air export markets, the United States is most important. In terms of value,

about fifty per cent of Hong Kong air exports were sent to the United States in 1973. However, when compared with 58.5 per cent in 1970, 60.3 per cent in 1971, and 58.9 per cent in 1972, the percentage showed a sudden decline in the year 1973. The second most important market was the United Kingdom with 8.2 per cent of Hong Kong's total air exports (Table 5.3).

TABLE 5.2

AIR PENETRATION IN COMMODITIES IN 1972

Selected Groups	% of Group Total in Value
Pearls, precious and semi-precious stones	94.6
Electrical machinery and apparatus	86.3
Watches and clocks	74.5
Jewellary and goldsmiths' and silversmiths' wares	49.2
Miscellaneous manufactured articles	24.5
Clothing (except fur clothing)	17.7
Telecommunications apparatus	8.6
Perambulators, toys, games and sporting goods	2.6
Others	4.0

Source: Appendix H

TABLE 5.3

AIR EXPORTS TO MAJOR COUNTRIES
(Unit in percentage by value)

Countries	1970	1971	1972	1973
U.S.A.	58.5	60.3	58.9	49.7
U.K.	7.5	5.3	8.1	8.2
West Germany	8.1	6.4	7.4	7.5
Japan	4.8	6.1	4.5	7.1
Singapore	1.3	1.9	2.2	3.2
Canada	2.6	2.2	2.0	1.7
Switzerland	1.3	1.6	1.9	2.9
Netherlands	1.4	1.4	1.6	1.9
Taiwan	1.4	2.4	1.5	2.8
Sweden	1.3	0.8	1.2	1.0
U.S. Oceania	0.7	0.9	1.0	1.5
France	0.5	1.0	1.0	1.3
Trucial States	0.3	0.9	1.0	1.2
Others	10.3	8.8	7.7	10.0
Total	100.0	100.0	100.0	100.0

Source: Appendix I

The air penetration of Hong Kong's exports in each country is shown in Table 5.4. The countries with the highest penetration are different from those major Hong Kong air export markets. Among all the major Hong Kong air export markets, U.S. Oceania is the most important one. In terms of value, about 68.3 per cent of all the Hong Kong exports to this area were transported by air in 1973. Other important countries were Trucial States (40.7 per cent), and Switzerland (36.9 per cent). For the United States, the most important air export market of Hong Kong, only 14.5 per cent of Hong Kong's total exports to this country was carried by aircraft.

TABLE 5.4

THE PERCENTAGE OF HONG KONG EXPORTS CARRIED BY AIR - BY COUNTRIES
(Unit in per cent)

Countries	% of Country Total in Value in 1973
U.S. Oceania	68.3
Trucial States	40.7
Switzerland	36.9
France	29.3
Taiwan	24.6
U.S.A.	24.5
Japan	22.5
Singapore	20.2
Netherlands	15.8
West Germany	13.2
Canada	11.4
Swenden	9.8
U.K.	9.7
Others	8.2

Source: Appendix I

The percentages of exports of different commodities carried by air may or may not vary greatly according to markets. Electronic components and computer parts were mainly exported by air. Exports of these items to West Germany, Japan, Singapore, and Sweden were all air-freighted. In the United States, the United Kingdom, France, and Taiwan the percentage of these items that were carried by air was over 98 per cent. The same high percentages were also evident in air exports of transistors and diodes by markets (9, p. 7).

However, parts for television sets were different. The percentage of such items carried by air ranged from 14.5 per cent in the case of Taiwan to 63.7 per cent in the case of the United States. The percentages in jewellery exports by air also ranged from over 80 per cent in some of the major markets to 30 per cent in the smaller markets (9, p. 7). Even greater variations of percentages existed in clothing. In the export of clothing, the percentages of these items carried by air ranged were 7.3 per cent for Australia; between 11 per cent and 14 per cent for Singapore, France, the United Kingdom, Canada, and the Netherlands; 22 per cent for Japan; 27 per cent for the United States; 71 per cent for U. S. Oceania; and 90 per cent for South Viet Nam (9, p. 8).

6.0 THE LOCAL SHIPPERS' OPINIONS ABOUT AIR TRANSPORT

6.1 Background

Because of the high rate of growth in Hong Kong's economy and continuous development in air transportation service, the volume of air cargo and the air penetration in Hong Kong has increased remarkably. In the fiscal year 1973/74, the total amount of cargo that was carried by aircraft was 100,721 metric tons of which 61,117 metric tons were exports. This made the airborne exports 17.3 per cent of the total exports in value. In predicting the future development of air cargo transportation in Hong Kong, we should first understand the local shippers' opinions about air transportation. Thus, a survey of air cargo transportation in Hong Kong was undertaken in December 1974. The objectives of this survey were:

(a) to find out the factors that influence the choice of transportation means

(b) to find out the local shippers' opinions about air transport.

6.2 Methodology

Sources of data

The data that was used was collected in the Hong Kong Air Cargo Transportation Survey - 1974. These data came from local shippers that included both manufacturers and exporters.

Sampling

There were problems in sampling. As no list of local shippers was available, samples had to be taken from lists of manufacturers and exporters. However, there was also no list which contained only manufacturers of exports. Therefore, samples were chosen in the following way.

Samples were selected from two groups of people, exporters and manufacturers. Samples for exporters were chosen from The Hong Kong Exporters' Association Membership List, March, 1973. Samples for manufacturers were taken from name lists of manufacturers of different industries. Because of the many kinds of industries in Hong Kong, some of which did not or only had a few exports, samples were only chosen from manufacturers of the main exported products or main air exported products. In this way, the risk of taking samples of manufacturers that had no exports was reduced. Thus, samples were taken from manufacturers of the following products:

(a) Clothing

(b) Textile fabrics

(c) Toys and dolls

(d) Transistorized radios

(e) Artificial flowers

(f) Travel goods, handbags and similar articles

(g) Electronic components and parts for computers

(h) Transistors and diodes

(i) Watches and clocks

(j) Footwear

(k) Jewellery

(l) Pearls, precious and semi-precious stones

Lists of manufacturers of the above products were obtained from the Hong Kong Trade Development Council. These lists did not contain all the manufacturers of those industries in Hong Kong but only those who had asked the Hong Kong Trade Development Council to develop foreign markets for them and those who had their names in the trade directory. As most of these manufacturers had exports, it was better to take sample from these lists rather than those that contained all manufacturers.

A systematic sampling method was used in taking samples from both groups. A total of 256 was drawn. This included thirty-two export firms and 224 factories.

Survey method

A mail questionnaire in English was sent to each of the 256 selected companies. The questionnaire was composed of two parts: (a) overall situation, and (b) the situation of the latest shipment. Questions in the questionnaire were of the simple yes-no type or of the multiple-choice type as shown in Appendix K.

The mailing of questionnaires was done between December 16, 1974, and December 23, 1974. Twelve questionnaires were returned because of address changes. Forty-two replies were received. Among these replies, thirty-two were completed by factories and ten were completed by export firms.

This survey method had limitations:

(a) The non-response rate was high.

(b) The assurance that questions were fully understood

and that answers were properly recorded was not possible.

(c) The person who filled out the questionnaire, whether he knew the system or not, was unknown.

Because of the small number of respondents, care must be taken in generalizing sample results to conclusions about the total industry. In the presentations which follow, contrasts are drawn between various subgroups among the sample respondents. Often, the differences observed between sample subgroups cannot be generalized with a high degree of assurance that the generalization is valid.

6.3 Hypotheses

Several hypotheses were behind this survey:

(a) There is a relation between the nature of the company and the use of air transport.

(b) There is a relation between the nature of the company and the opinions about air transport.

(c) There is a relation between the nature of the shipment and the choice of transportation means.

(d) There is different reasons for choosing different kinds of transportation means.

6.4 Analysis

Based on the hypotheses, an analysis of the data that was collected by the survey was made.

The relation between the nature of the company and the use of air transport[1]

Type of Company

Both export firms and factories may have exports. However, the business of these two kinds of companies is different. Export firms are companies that are mainly concerned with the export business. They do not manufacture goods; instead, they buy goods for exports. They generally export several kinds of goods. Unlike export firms, factories manufacture their own products for exports. Thus, they generally export only one kind of product, the product they produce.

The survey results, as shown in Table 6.1, showed that in terms of value almost all export firms had less than forty per cent of their exports transported by air. Only ten per cent of the sample export firms did not use air transport in 1974, and twenty per cent had more than eighty per cent of their exports transported by air. On the other hand, the situation of factories was quite different. Twenty-one point nine per cent of all the sample factories did not use air transport at all. Another 21.9 per cent only transported less than five per cent of their exports by air, and 31.2 per cent of them had more than ninety-five per cent of their exports transported by air.

This difference might be mainly due to the fact that most export firms export all kinds of goods while factories only export one kind of goods which might or might not be suitable for air transport.

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[1]The use of air transport is represented by the percentage of total exports transported by air, in terms of value.

TABLE 6.1

THE USE OF AIR TRANSPORT
BY TYPE OF COMPANY
(Unit in Per Cent)

Per Cent of Exports That Carried by Air	Export Firms	Factories
None	10.0	21.9
5% or less	20.0	21.9
6% - 20%	30.0	9.4
21% - 40%	20.0	9.4
41% - 60%	0.0	3.1
61% - 80%	0.0	0.0
81% - 95%	10.0	3.1
Over 95%	10.0	31.2
Total	100.0	100.0

Source: Appendix L1

Size of Company

In the survey the criterion to determine the size of the companies was the number of workers because it was an easy method to employ. However, it was difficult to apply the same yardstick to all types of business. A export firm employing 100 persons would be considered large, while a factory having 100 workers would be classified as small. Thus, in this survey export firms and factories were separately classified into different size groups. Export firms were divided into four groups:

(a) Firms with less than twenty employees were considered as very small.

(b) Firms with twenty to forty-nine employees were defined as small.

(c) Firms with fifty to ninety-nine employees were classified as medium size.

(d) Firms with more than ninety-nine employees were defined as large.

Factories were divided into large, medium, and small groups.

(a) Factories with less than 200 employees were classified as small.

(b) Factories with 200 to 999 employees were classified as medium.

(c) Factories with 1,000 or more employees were classified as large.

Among the sample export firms, no relation was found between the size of the firm and the use of air transport as shown in Table 6.2. Regardless of their size, most of them had less than forty per cent of their exports transported by air. However, there were a few small and medium size firms which transported more than eighty-one per cent of their exports by air, whereas no large or very small firms had such a high percentage of air exports. This might have been due to the number of the kinds of goods they exported.

Among the sample factories, large factories, as shown in Table 6.3, showed a more extreme situation than small factories. Thirty per cent of the large factories had no air exports; another forty per cent only had less than five per cent of their exports transported by air whereas the remaining thirty per cent shipped

more than ninety-five per cent of their exports by aircraft. The situation in small factories was not so extreme. Only 22.2 per cent of the small factories had no air exports and 27.8 per cent had more than ninety-five per cent of their exports transported by air.

TABLE 6.2

THE USE OF AIR TRANSPORT
BY SIZE OF COMPANY --
EXPORT FIRMS
(Unit in Per Cent)

Per Cent of Exports That Carried by Air	Very Small Firms	Small Firms	Medium Firms	Large Firms
None	0.0	25.0	0.0	0.0
5% or less	0.0	0.0	33.3	50.0
6% -20%	100.0	25.0	33.3	0.0
21% - 40%	0.0	25.0	0.0	50.0
41% - 60%	0.0	0.0	0.0	0.0
61% - 80%	0.0	0.0	0.0	0.0
81% - 95%	0.0	25.0	0.0	0.0
Over 95%	0.0	0.0	33.3	0.0
Total	100.0	100.0	100.0	100.0

Source: Appendix L2

TABLE 6.3

THE USE OF AIR TRANSPORT
BY SIZE OF COMPANY --
FACTORY
(Unit in Per Cent)

Per Cent of Exports That Carried by Air	Small Factory	Medium Factory	Large Factory
None	22.2	0.0	30.0
5% or less	16.7	0.0	40.0
6% - 20%	11.1	25.0	0.0
21% - 40%	16.7	0.0	0.0
41% - 60%	0.0	25.0	0.0
61% - 80%	0.0	0.0	0.0
81% - 95%	5.6	0.0	0.0
Over 95%	27.8	50.0	30.0
Total	100.0	100.0	100.0

Source: Appendix L3

Type of Ownership

Companies were divided into those which only had local capital, those which only had foreign capital, and those which had both local and foreign capital or joint venture. In this survey no joint venture company was found. Because companies with different ownership may have different organization and management, the use of air transport may be different.

Among export firms, Table 6.4 shows that no relation was found between the type of capital and the use of air transport. Whether or not they were locally or foreign owned, most companies had less than forty per cent of their exports transported by air. Although the percentage distribution seemed different among firms

with local ownership and firms with foreign ownership, there was not much difference between these two groups. This may be because there were only two sample export firms with foreign capital. This made the distribution look extreme in this group.

TABLE 6.4

THE USE OF AIR TRANSPORT
BY TYPE OF CAPITAL --
EXPORT FIRMS
(Unit in Per Cent)

Per Cent of Exports That Carried by Air	Local Ownership	Foreign Ownership
None	14.3	0.0
5% Or less	14.3	50.0
6% - 20%	42.9	0.0
21% - 40%	14.3	50.0
41% - 60%	0.0	0.0
61% - 80%	0.0	0.0
81% - 95%	0.0	0.0
Over 95%	14.3	0.0
Total	100.0	100.0

Source: Appendix L4

The survey results, as shown in Table 6.5, showed that factories of foreign ownership employed more air transport than factories of local ownership; 62.5 per cent of the foreign owned factories had more than ninety-five per cent of their export transported by air. This is in contrast to the 20.8 per cent of the locally owned factories that had such a high percentage of air exports. On the other hand, only 12.5 per cent of the foreign

owned factories did not use air transport, whereas 25.0 per cent of the locally owned factories did not use air transport at all.

TABLE 6.5

THE USE OF AIR TRANSPORT BY TYPE OF CAPITAL -- FACTORY
(Unit in Per Cent)

Per Cent of Exports That Carried by Air	Local Ownership	Foreign Ownership
None	25.0	12.5
5% or less	20.8	25.0
6% - 20%	12.5	0.0
21% - 40%	12.5	0.0
41% - 60%	4.2	0.0
61% - 80%	0.0	0.0
81% - 95%	4.2	0.0
Over 95%	20.8	62.5
Total	100.0	100.0

Source: Appendix L5

Export Distribution

The export pattern whereby some companies evenly distribute their exports throughout the year, whereas others export according to the different season may influence the use of air transport. The survey showed that factories with unevenly distributed exports used air transport less than those with evenly distributed exports. More than half of the sample factories with unevenly distributed exports, as shown in Table 6.6, had none or less than five per cent of their exports shipped by air, whereas 38.1 per cent of the factories with evenly distributed exports were in this

situation. On the other hand, 38.1 per cent of the factories with evenly distributed exports had more than eighty per cent of their exports transported by air, whereas only 27.3 per cent of the factories with unevenly distributed exports had such a high percentage of air exports.

TABLE 6.6

THE USE OF AIR TRANSPORT
BY EXPORT DISTRIBUTION PATTERN
IN FACTORIES
(Unit in Per Cent)

Per Cent of Exports That Carried By Air	Factory with Evenly Distributed Exports	Factory with Unevenly Distributed Exports
None - 5%	38.1	54.6
6% - 20%	9.5	9.1
21% - 40%	14.3	0.0
41% - 60%	0.0	9.1
61% - 80%	0.0	0.0
Over 80%	38.1	27.3
Total	100.0	100.0

Source: Appendix L6

Most of the export firms had their exports evenly distributed. In fact, only one export firm with unevenly distributed exports was found in the sample. Thus, no analysis about the relation between the use of air transport and export distribution of export firms can be made.

The relation between the nature of the company and the opinions about air transport

Type of Company

As shown in Table 6.7, both export firms and factories considered that the advantages of air transport were quicker capital turnover, less transportation time, frequent schedules, more accurate arrival time, and better care. Less transportation time was considered to be the most important advantage.

TABLE 6.7

THE OPINIONS ABOUT AIR TRANSPORT
BY TYPE OF COMPANY
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantages of air transport	
	Export Firms	Factories
cheap transportation charges	10.0	21.9
cheap loading charges	20.0	28.1
cheap unloading charges	10.0	21.8
less storage cost	30.0	28.1
less insurance	0.0	18.8
less packing cost	20.0	21.8
quick capital turnover	70.0	68.7
less transportation time	100.0	87.5
frequent schedules	90.0	71.9
accurate arrival time	80.0	71.9
no trans-shipment needed	40.0	25.0
better care	70.0	59.4
easier documentation	30.0	28.1

Source: Appendix L7

Size of Company

The survey results, as shown in Table 6.8, showed that large export firms saw greater range of advantages in using air transport than small firms did. Very small export firms (those that employed less than twenty employees) considered that quicker capital turnover, less transportation time, and frequent schedules were the only important advantages of air transport. Small and medium size firms (those that employed twenty to ninety-nine employees) also considered better care, accuracy in arrival time, easy documentation, less storage cost, and no trans-shipment as important advantages. Large firms (those that employed more than ninety-nine employees) also had the same opinion, except that they did not consider easy documentation and less storage cost as important advantages. Instead, they considered cheaper loading and unloading charges as important advantages.

TABLE 6.8

THE OPINIONS ABOUT AIR TRANSPORT BY SIZE OF COMPANY -- EXPORT FIRMS
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantages of air trans.			
	Very Small	Small	Medium	Large
cheap transportation charge	0.0	25.0	0.0	0.0
cheap loading charges	0.0	25.0	0.0	50.0
cheap unloading charges	0.0	0.0	0.0	50.0
less storage cost	0.0	50.0	33.3	0.0
less insurance	0.0	0.0	0.0	0.0
less packing cost	0.0	0.0	33.3	50.0
quick capital turnover	100.0	50.0	100.0	50.0
less transportation time	100.0	100.0	100.0	100.0
frequent schedules	100.0	75.0	100.0	100.0
accurate arrival time	0.0	75.0	100.0	100.0
nc trans-shipment needed	0.0	50.0	33.3	50.0
better care	0.0	100.0	66.6	50.0
ease documentation	0.0	25.0	66.6	0.0

Source: Appendix L8

Most of the sample factories, both large or small, as shown in Table 6.9, considered that quicker capital turnover, less transportation time, frequent schedules, and more accuracy in arrival time as important advantages of air transport. However, there were still differences in opinions between different size groups. More medium and large size factories (those that employed more than 199 employees) considered that cheaper transportation charges and the lack of trans-shipment were important advantages compared to small factories. Fifty per cent of medium size factories and forty per cent of large factories considered cheaper transportation charges and no trans-shipment need as important advantages, whereas only 5.6 per cent of small factories thought that air transport provided cheaper transportation charges, and 11.1 per cent considered that no need for trans-shipment was an important advantage.

TABLE 6.9

THE OPINIONS ABOUT AIR TRANSPORT BY SIZE OF COMPANY -- FACTORIES
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantages of air trans		
	Small	Medium	Large
cheap transportation charge	5.6	50.0	40.0
cheap loading charges	22.2	50.0	30.0
cheap unloading charges	16.7	25.0	30.0
less storage cost	33.3	0.0	30.0
less insurance	22.2	0.0	20.0
less packing cost	27.8	0.0	20.0
quick capital turnover	66.7	100.0	60.0
less transportation time	83.3	100.0	90.0
frequent schedules	66.7	100.0	70.0
accurate arrival time	66.7	75.0	80.0
no trans-shipment needed	11.1	50.0	40.0
better care	50.0	100.0	60.0
ease documentation	33.3	25.0	20.0

Source: Appendix L9

Type of Ownership

Most of the sample export firms, regardless of their ownership, considered less transportation time, frequent schedules, and accuracy in arrival time as important advantages of air transport as shown in Table 6.10. However, more locally owned firms tended to consider quick capital turnover and better care as important advantages.

TABLE 6.10

THE OPINIONS ABOUT AIR TRANSPORT
BY TYPE OF CAPITAL -- EXPORT FIRM
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantage of air trans.	
	Local Ownership	Foreign Ownership
cheap transportation charge	0.0	0.0
cheap loading charges	14.3	0.0
cheap unloading charges	14.3	0.0
less storage cost	28.6	0.0
less insurance	0.0	0.0
less packing cost	28.6	0.0
quick capital turnover	85.7	50.0
less transportation time	100.0	100.0
frequent schedules	85.7	100.0
accurate arrival time	71.5	100.0
no trans-shipment needed	42.9	50.0
better care	71.5	50.0
ease documentation	14.3	50.0

Source: Appendix L10

There was not much difference among the opinions of factories of different type of ownership as shown in Table 6.11. All the sample factories considered quick capital turnover, less transportation time, frequent schedules, accuracy in arrival time, and better care as important advantages of air transport. The only difference was that more foreign owned factories considered that air transport provided cheaper transportation charges. Fifty per cent of the foreign owned factories considered that air transport had these advantages, whereas 12.5 per cent of the local capital factories had the same opinion.

TABLE 6.11

THE OPINIONS ABOUT AIR TRANSPORT
BY TYPE OF CAPITAL -- FACTORY
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantage of air trans.	
	Local Ownership	Foreign Ownership
cheap transportation charge	12.5	50.0
cheap loading charges	29.2	25.0
cheap unloading charges	20.8	25.0
less storage cost	29.1	25.0
less insurance	20.8	12.5
less packing cost	25.0	12.5
quick capital turnover	66.7	75.0
less transportation time	87.5	87.5
frequent schedules	70.8	75.0
accurate arrival time	70.8	75.0
no trans-shipment needed	20.8	37.5
better care	54.2	75.0
ease documentation	29.1	25.0

Source: Appendix L11

Export Distribution

As mentioned on p. 55, only one sample export firm had unevenly distributed exports. The sample factories, no matter how their exports were distributed, considered quick capital turnover, less transportation time, frequent schedules and accurate arrival time as important advantages of air transport as shown in Table 6.12. However, more factories with unevenly distributed exports also considered less storage cost as an important advantage whereas more factories with evenly distributed exports also considered better care as an important advantage.

TABLE 6.12

THE OPINIONS ABOUT AIR TRANSPORT BY TYPE OF EXPORT DISTRIBUTION -- FACTORY
(Unit in Per Cent)

Advantages	% of companies that considered those as important advantage of air trans.	
	Evenly distributed	Unevenly distributed
cheap transportation char	33.3	0.0
cheap loading charges	28.5	27.3
cheap unloading charge	23.8	18.2
less storage cost	19.1	45.5
less insurance	19.1	18.2
less packing cost	19.1	27.3
quick capital turnover	66.7	72.7
less transportation time	90.5	81.8
frequent schedules	71.4	72.8
accurate arrival time	76.2	63.7
no trans-shipment needed	38.1	0.0
better care	71.4	36.4
ease documentation	28.5	27.3

Source: Appendix L12

The relation between the nature of the shipment and the choice of transportation means

Content of the shipment

Among the sample respondents all shippers of travel goods and handbags, electronic components, transistors and diodes, watches and clocks, pearls, and precious stones, as shown in Table 6.13, used air or air/land transport exclusively, whereas no shippers of transistorized radios, manufactured metal goods or artificial flowers used air or air/land transport. The use of air transport for other shipments was in between. Sixty-six point seven (66.7) per cent of the shipments of jewellery, 38.5 per cent of the shipments of clothing, 33.3 per cent of the shipments of footwear, and 25.0 per cent of the shipments of textile fabrics, toys and dolls were transported by air or air/land. However, the above results are based on a very small number of respondents. In the survey results, there were very few cases of shipments of travel goods and handbags, and transistors and diodes.

Destination

In terms of the value of Hong Kong airborne exports, the five major air export markets of Hong Kong are the United States, the United Kingdom, West Germany, Japan, and Singapore. Among these five major air export markets, the United States was the one with the highest air penetration as shown in Table 6.14. Sixty-one point one (61.1) per cent of the Hong Kong export shipments to this country were transported by air or air/land. However, considering all export markets, the United States did not have the highest penetration. The percentage of air penetration of countries

other than the five major markets and Canada was 66.7 per cent.

TABLE 6.13

THE AIR PENETRATION OF SHIPMENTS BY CONTENT
(Unit in Per Cent)

Items	Air-Air/Land	Sea-Sea/Land	Sea/Air
clothing	38.5	53.9	7.7
textile fabrics	25.0	75.0	0.0
toys and dolls	25.0	75.0	0.0
transistorized radios	0.0	100.0	0.0
manufactures of metal	0.0	50.0	50.0
artificial flowers	0.0	100.0	0.0
travel goods, handbags and similar articles	100.0	0.0	0.0
electronic components & parts for computers	100.0	0.0	0.0
transistors & diodes	100.0	0.0	0.0
watches & clocks	100.0	0.0	0.0
footwear	33.3	66.7	0.0
jewellery	66.7	33.3	0.0
pearls, precious & semi-precious stones	100.0	0.0	0.0

Source: Appendix L13

Payer of Transportation Fees

Because the transportation fee is an important factor to be considered when choosing the transportation means, the payer of the fee will influence the choice. Table 6.15 shows that 52.4 per cent of the shipments which had transportation fees paid for by the buyer were exported by air, whereas 63.2 per cent of the shipments whose transportation fees were paid by the seller were exported by sea. Among all the sample shipments, there were only two ship-

ments had transportation fees which were paid by both buyer and seller. These two shipments were exported by air or air/land.

TABLE 6.14

THE AIR PENETRATION OF SHIPMENTS BY DESTINATION
(Unit in Per Cent)

Countries	Air-Air/Land	Sea-Sea/Land	Sea/Air
U.S.A.	61.1	33.3	5.6
U.K.	37.5	62.5	0.0
West Germany	14.3	71.4	14.3
Canada	33.3	66.7	0.0
Others	66.7	33.3	0.0

Source: Appendix L14

TABLE 6.15

THE CHOICE OF TRANSPORTATION MEANS BY PAYERS OF TRANSPORTATION FEE
(Unit in Per Cent)

Payer of transportation fee	Air-Air/Land	Sea-Sea/Land	Sea/Air
Seller	36.8	63.2	0.0
Buyer	52.4	38.1	9.5
Both Seller & Buyer	100.0	0.0	0.0

Source: Appendix L15

Terms of Payment

Terms of payment will influence the turnover of capital, hence influence the choice of transportation means. Because air transport provides quick transportation, it enables quicker capital turnover for the exporter than sea transport if the buyer pays after receiving the goods. For L.C. (letter of credit), sellers receive the money just after they ship the goods. Thus, no matter what their transport means are, they have the same capital turnover rate. Transportation method also has little influence on capital turnover rate in the case of open-account transactions, whereby goods are shipped by the exporter to the foreign buyer, and the bill is rendered in the form of an invoice which is liquidated at some future date. For those shipments that used D.A. (documents against acceptance) or D.P. (documents against payment), payments are usually made after arrival of the goods. For consignment shipments, the exporter ships his goods to a foreign buyer and payment is deferred until the foreign agent resells the goods. In these cases the transportation method may affect the capital turnover rate.

In the survey as shown in Table 6.16, only 23.5 per cent of the sample shipments with L.C. terms used air or air/land transport whereas 75.0 per cent of the consignment shipments used air or air/land transport. The percentage of shipments using D.A. or D.P. terms that used air or air/land transport was in between those of L.C. terms and consignment terms. In the sample all shipments of open-account transactions were by air.

TABLE 6.16

THE CHOICE OF TRANSPORTATION MEANS
BY TERMS OF PAYMENT
(Unit in Per Cent)

Terms of Payment	Air-Air/Land	Sea-Sea/Land	Sea/Air
L.C.	23.5	64.7	11.8
D.A.	33.3	66.7	0.0
D.P.	72.7	27.3	0.0
Consignment	75.0	25.0	0.0
Open-account	100.0	0.0	0.0

Source: Appendix L16

Reasons for choosing different kinds of transportation means

Air or Air/Land

As shown in Table 6.17, the most important reasons for choosing these kinds of transportation means were:

(a) less transportation time

(b) accuracy in arrival time

Seventy to Seventy-five per cent of the exporters that used air or air/land transportation ranked these as very important reasons. Other important reasons were:

(a) frequent schedules

(b) buyer requirements

(c) better care

(d) quicker capital turnover

(e) easy documentation

TABLE 6.17

REASONS FOR CHOOSING AIR OR AIR/LAND TRANSPORT
(Unit in Per Cent)

Reasons	Very Important	Important
less transportation time	75.0	0.0
accurate arrival time	70.0	5.0
frequent schedules	50.0	15.0
better care	35.0	30.0
requested by the buyer	60.0	5.0
quicker capital turnover	40.0	15.0
easier documentation	25.0	25.0
usual practice	20.0	15.0
cheaper loading charges	10.0	15.0
no trans-shipment needed	15.0	10.0
less storage cost	15.0	5.0
less packing cost	10.0	10.0
less insurance	15.0	0.0
cheaper transportation charge	5.0	5.0
cheaper unloading charges	5.0	0.0

Source: Appendix L17

Sea or Sea/Land

The most important reason for choosing sea or sea/land transport, as shown in Table 6.18, was the cheaper transportation charges. Eighty-five per cent of the shippers who used this transportation means ranked this as a very important factor, whereas ten per cent ranked it as an important reason. Other im-

portant reasons for choosing this transportation means were:

(a) the buyer's request

(b) usual practice

About fifty per cent of the shippers who used this kind of transport also considered that sea or sea/land transport provided cheaper loading and unloading charges.

TABLE 6.18

REASONS FOR CHOOSING SEA OR SEA/LAND TRANSPORT
(Unit in Per Cent)

Reasons	Very Important	Important
cheaper transportation charge	85.0	10.0
requested by the buyer	30.0	30.0
cheaper loading charges	15.0	40.0
usual practice	20.0	30.0
cheaper unloading charges	10.0	35.0
frequent schedules	0.0	45.0
more accurate arrival time	5.0	20.0
less storage cost	0.0	20.0
less insurance	0.0	20.0
no trans-shipment needed	0.0	20.0
less packing cost	5.0	10.0
quicker capital turnover	5.0	10.0
better care	5.0	10.0
easier documentation	0.0	15.0
less transportation time	0.0	5.0

Source: Appendix L18

Sea/Air

As only two sample shipments used this kind of transport, the result was not representative. The main reason for choosing

this kind of transport was that it was requested by the buyer as shown in Table 6.19. Other important reasons were:

(a) less transportation time

(b) frequent schedules

(c) accuracy in arrival time

(d) better care

(e) less transportation charges

(f) less loading charges

(g) less unloading charges

This seemed to be a mix of the advantages of air and sea transport.

TABLE 6.19

REASONS FOR CHOOSING SEA/AIR TRANSPORT
(Unit in Per Cent)

Reasons	Very Important	Important
requested by the buyer	100.0	0.0
cheaper transportation charge	0.0	50.0
cheaper loading charges	0.0	50.0
cheaper unloading charges	0.0	50.0
less transportation time	50.0	0.0
frequent schedules	50.0	0.0
more accurate arrival time	50.0	0.0
better care	50.0	0.0
less storage cost	0.0	0.0
less insurance	0.0	0.0
less packing cost	0.0	0.0
quicker capital turnover	0.0	0.0
no trans-shipment needed	0.0	0.0
easier documentation	0.0	0.0
usual practice	0.0	0.0

Source: Appendix L19

6.5 Conclusions

The main findings from the survey were the following:

(a) The percentage of air exports was different between export firms and factories. Most export firms had less than forty per cent of their exports transported by air, whereas most factories shipped most of their products or very little of their products by air.

(b) There was no relation between the size of the export firms and their percentage of air exports.

(c) There was a relation between the size of the factories and their percentage of air exports. Large factories had either a very low or very high percent of their exports transported by air. On the other hand, the practice of small factories was not defined; there were those who used a lot of air transport, those who used air transport to a moderate extend, and those who seldomly use air transport.

(d) There was no relation between the type of ownership of export firms and their percentage of air exports.

(e) Factories of foreign ownership employed more air transport than factories of local ownership.

(f) Factories with seasonally patterned exports used air transport less than those with evenly distributed exports.

(g) Quicker capital turnover, less transportation time, frequent schedules, more accuracy in arrival time, and better care were considered to be the advantages of air transport by both factories and export firms.

(h) Small export firms considered that air transport had only a

few advantages.

(i) Many large and medium size factories considered that air transport provided cheaper transportation charges and required no trans-shipment, whereas only a few small factories had these opinions.

(j) More locally owned export firms than foreign owned firms considered that quicker capital turnover and better care also were important advantages of air transport.

(k) Factories of different type of ownership had almost the same opinions about air transport, except that more foreign owned factories considered that air transport provided cheaper transportation charges.

(l) Factories with either seasonally or evenly distributed exports had almost the same opinions, except that more factories with seasonally distributed exports also considered less storage cost as important advantages. More factories with evenly distributed exports also considered better care as important advantages.

(m) Travel goods and handbags, electronic components and parts for computers, transistors and diodes, watches and clocks, pearls and precious stones, and jewellery were mainly transported by air or air/land.

(n) Among the five major air export markets, the United States was the one with the highest air penetration. However, it was not the one with the highest air penetration among all export markets of Hong Kong.

(o) Most shipments whose transportation fees were paid by the buyer

were exported by air whereas most shipments whose transportation fee were paid by seller were exported by sea.

(p) Most consignment shipments and shipments of open account transactions used air transport, whereas shipments with L.C. terms seldom use air transport. Shipments with D.A. or D.P. terms used more air transport than those of L.C. terms but less than consignment shipments.

(q) The important reasons for choosing air or air/land transport were less transportation time, accurate in arrival time, frequent schedules, better care, quicker capital turnover, easier documentation, and buyer's request.

(r) The important reasons for choosing sea or sea/land transport were cheaper transportation charges, buyer's request, and usual practice.

(s) The main reason for choosing sea/air transport was the buyer's request.

7.0 CONCLUSION

In recent years, industrial and economic difficulties have shown shippers that aviation had many advantages over surface transport. Speed, which is the greatest advantages of air transport, becomes much more important in a competitive world. Shippers can no longer afford the risk of delay. Shorter transit time allows them to reduce the time-lag between the manufacturing date and customer purchase date, so that erratic sales trends can be spotlighted more rapidly, and they are able to meet changes in demand quickly. Also, inventories can be reduced significantly, and the amount of capital tied up at any one time can be kept to a minimum, and risks of losses due to inventory obsolescence can be lower.

The future development of air freight industry in Hong Kong and its competition with sea transport depend mainly on the following factors.

(a) Freight rates -- The major disadvantage of air transport is its high freight rates. Thus, changes in freight rates of either air or sea transport will affect the competition between these two transport industries. In the past two years, the sea freight rate has increased considerably, while the air freight rate has remained rather stable. This has caused air freight growth. In the future, the most important

task that airline industry can accomplish is to maintain a realistic rate structure that, while taking into account the rising fuel bills and other increasing costs, prices air cargo at a level sufficiently competitive to encourage would-be shippers to use it.

(b) Education program -- According to this survey, many shippers, especially small manufacturers, did not fully understand the advantages of air transport. Many shippers used sea transport mainly because this was their usual practice. Thus, airlines should educate shippers to ensure that the benefits of air cargo and the total costs of transportation are fully understood. By doing this, the air freight industry will have more customers.

(c) Services -- Goods that use air transportation are usually service-sensitive. Good service is one of the main competitive strengths of air transport. Thus, better service provided by the air freight industry is needed for its future development. Good air cargo terminal facilities are also important. Poor facilities and slow cargo handling in the cargo terminal will offset the advantages of air transport. As there will be increased freight handling at Kai Tak, an air cargo terminal is being built in Hong Kong and should be fully operating by May 1976.

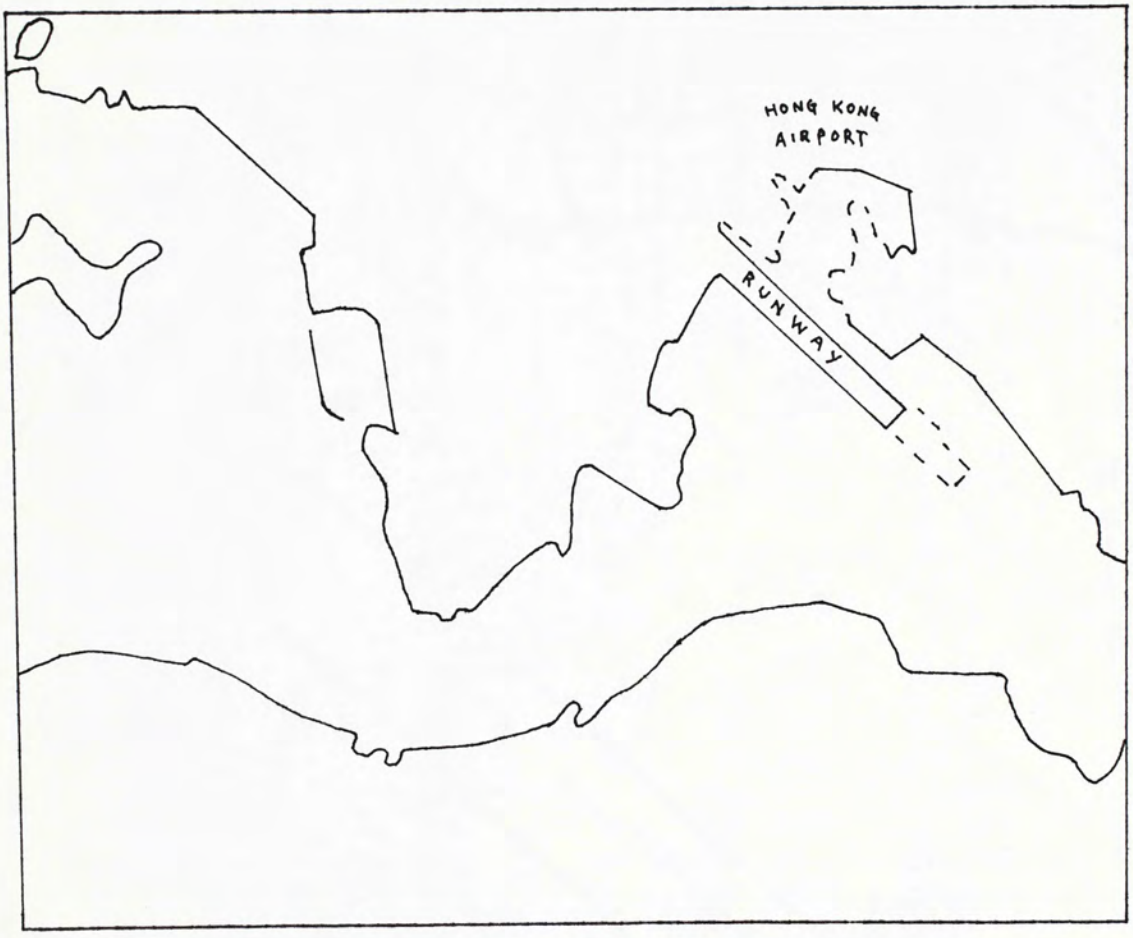
(d) Trade volume and composition -- Where high speed and good services are important, air cargo transport becomes almost necessary. This is particularily

true for fashion goods like high fashion clothes, service-sensitive goods like watches and clocks, valuable goods like jewellery and pearls, and perishable goods like flowers. The changes in the composition and volume of Hong Kong exports and imports will affect the use of air transport. The balance between the airborne export and import is also important. Airlines need to fly a ton of imports for every ton of exported goods. Airborne exports from Hong Kong are higher than airborne imports at present.

(e) Foreign investment in Hong Kong -- This survey's results showed that factories of foreign capital used more air transport than locally owned factories. The setting-up of more foreign owned factories may increase the use of air transport. On the other hand, when local manufacturers fully realize the advantages of air transport, they may use this means of transport at the level same as foreign capital factories do if their products are suitable for this kind of transportation means.

APPENDIX A

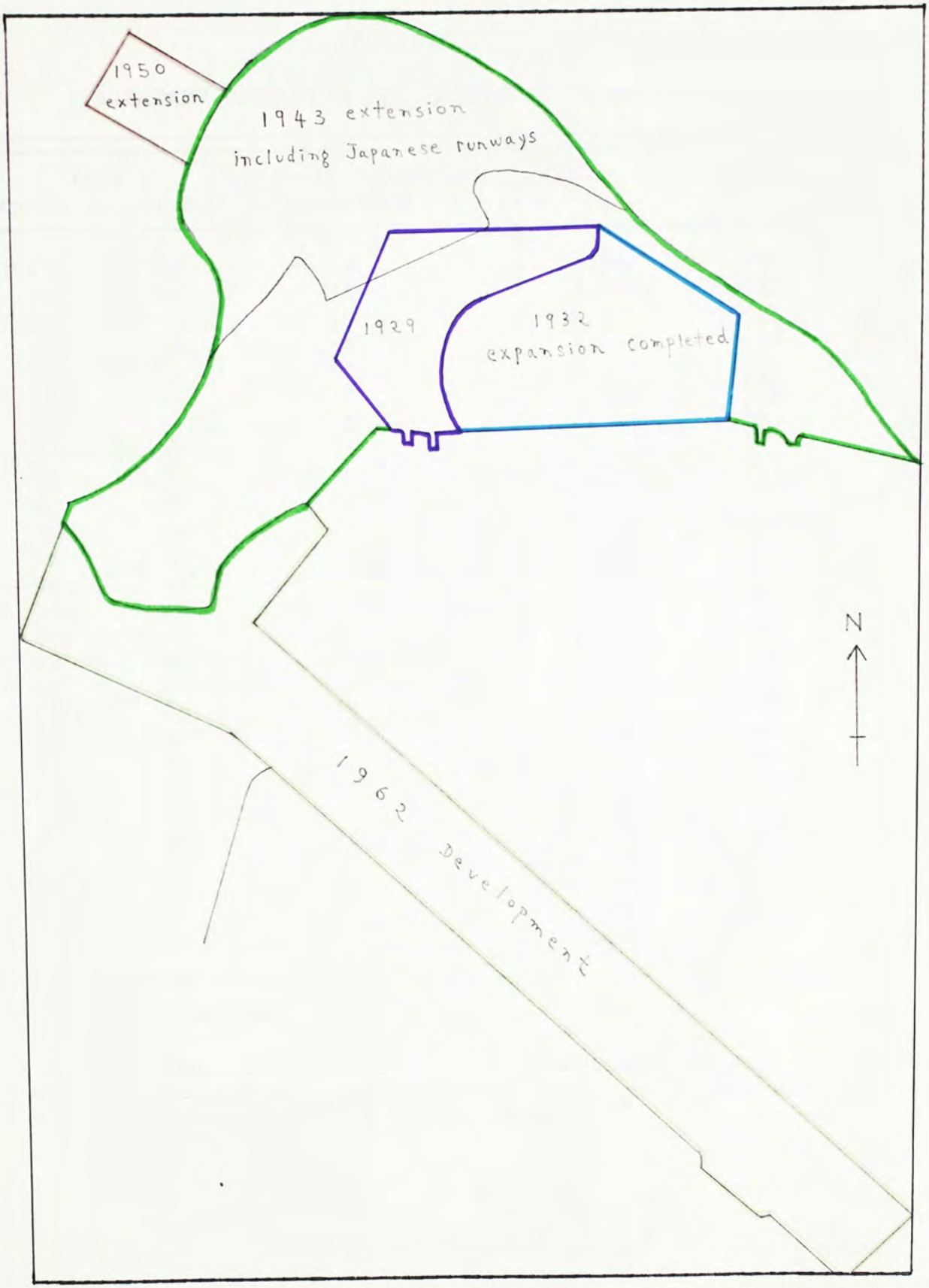
THE LOCATION OF HONG KONG AIRPORT



Source: Hong Kong Government, Hong Kong 1974 (Hong Kong: The Government Press, 1975)

APPENDIX B

THE DEVELOPMENT OF HONG KONG AIRPORT



Source: Hong Kong Government Information Service Department, Hong Kong Airport (Hong Kong: The Government Press, 1962).

APPENDIX C

AIRCRAFT OPERATORS AND MOVEMENTS IN HONG KONG

Year April to March		Aircraft Scheduled Operators	Aircraft Movements in	out
1947	1948	13	3,662	3,647
48	49	13	8,233	8,210
49	50	16	11,057	11,016
50	51	**	2,640	2,650
51	52	**	2,585	2,593
52	53	12	2,595	2,595
53	54	12	2,595	2,595
54	55	15	3,115	3,115
55	56	16	3,502	3,503
56	57	17	3,809	3,811
57	58	20	4,339	4,346
58	59	21	4,932	4,926
59	60	19	5,366	5,369
60	61	17	6,116	6,105
61	62	20	7,420	7,423
62	63	21	8,016	8,030
63	64	21	8,740	8,732
64	65	19	9,607	9,610
65	66	20	10,261	10,264
66	67	22	12,777	12,764
67	68	23	15,546	15,554
68	69	24	17,240	17,239
69	70	28	20,158	20,160
70	71	28	23,853	23,860
71	72	30	24,679	24,684
72	73	30	24,961	24,956
73	74	30	27,083	27,079

** no information

Source: Hong Kong Civil Aviation Department, Annual Departmental Report (Hong Kong: The Government Press, 1946-1950, 1952-1974).

APPENDIX D

AIR FREIGHT IN HONG KONG

Year		Freight (Metric Ton)		
April to March		In	Out	Increase/Decrease
1947	1948	427.3	907.0	-
48	49	526.1	1,071.4	+ 19.7%
49	50	2,792.5	3,100.4	+268.9%
50	51	1,033.3	1,468.7	- 57.5%
51	52	1,135.5	1,475.3	+ 4.3%
52	53	1,130.0	1,542.1	+ 2.3%
53	54	619.3	1,543.8	- 19.0%
54	55	613.9	1,725.2	+ 8.1%
55	56	578.5	2,104.1	+ 14.6%
56	57	768.9	2,347.3	+ 16.1%
57	58	934.0	2,641.1	+ 14.7%
58	59	956.2	2,645.5	+ 0.7%
59	60	1,320.8	3,177.0	+ 24.9%
60	61	1,621.1	3,309.6	+ 9.6%
61	62	1,924.9	3,806.9	+ 16.3%
62	63	2,140.4	5,082.3	+ 26.0%
63	64	2,469.9	6,122.8	+ 19.0%
64	65	3,121.4	7,697.6	+ 25.9%
65	66	4,112.5	11,246.5	+ 42.0%
66	67	6,153.2	17,113.8	+ 51.5%
67	68	6,047.0	21,484.8	+ 18.3%
68	69	9,747.6	30,916.0	+ 47.7%
69	70	14,527.7	37,983.7	+ 29.1%
70	71	17,382.2	44,882.1	+ 18.5%
71	72	24,199.0	54,011.2	+ 25.6%
72	73	28,360.4	56,189.7	+ 8.1%
73	74	39,603.5	61,117.6	+ 19.1%

Source: Hong Kong Civil Aviation Department, Annual Departmental Report (Hong Kong: The Government Press, 1946-1950, 1952-1974).

APPENDIX E

HONG KONG EXTERNAL TRADE BY DIFFERENT TRANSPORTATION MEANS
(Weight in 1,000 Metric Tons)

Year	Sea		Air		Rail		Total
1947	3,888	96.70%	1	0.02%	132	3.28%	4,021
48	4,075	97.81%	2	0.05%	89	2.14%	4,166
49	5,568	99.11%	6	0.11%	44	0.78%	5,618
50	6,871	95.22%	2	0.03%	343	4.75%	7,216
51	5,684	95.32%	3	0.05%	276	4.63%	5,963
52	4,938	95.57%	3	0.06%	226	4.37%	5,167
53	4,854	95.31%	2	0.04%	237	4.65%	5,093
54	5,147	97.70%	2	0.04%	119	2.26%	5,268
55	5,855	97.24%	3	0.05%	163	2.71%	6,021
56	6,578	96.79%	3	0.05%	215	3.16%	6,796
57	6,828	97.06%	3	0.04%	204	2.90%	7,035
58	7,284	96.78%	3	0.04%	239	3.18%	7,526
59	7,482	96.67%	4	0.05%	254	3.28%	7,740
60	8,088	95.73%	5	0.06%	356	4.21%	8,449
61	8,297	96.12%	6	0.07%	329	3.81%	8,632
62	9,423	96.00%	7	0.07%	386	3.93%	9,816
63	10,504	95.73%	8	0.07%	461	4.20%	10,973
64	11,413	94.42%	10	0.08%	665	5.50%	12,088
65	11,639	92.94%	14	0.11%	870	6.95%	12,523
66	12,378	92.13%	21	0.16%	1,036	7.71%	13,435
67	11,191	94.65%	26	0.22%	606	5.13%	11,823
68	11,470	93.12%	37	0.30%	810	6.58%	12,317
69	12,609	93.09%	51	0.38%	885	6.53%	13,545
70	13,425	93.58%	61	0.43%	860	5.99%	14,346
71	14,859	93.27%	75	0.47%	998	6.26%	15,932
72	16,113	92.84%	81	0.47%	1,161	6.69%	17,355
73	17,807	93.04%	96	0.50%	1,237	6.46%	19,140

Source: Hong Kong Census and Statistics Department, Hong Kong Statistics 1947-1967 (Hong Kong: The Government Press, 1969)

Hong Kong Census and Statistics Department, Hong Kong Monthly Digest of Statistics (Hong Kong: The Government Press, 1971)

Hong Kong Government, Hong Kong 1973 (Hong Kong: The Government Press, 1974)

Hong Kong Government, Hong Kong 1974 (Hong Kong: The Government Press, 1975)

APPENDIX F

HONG KONG TOTAL EXTERNAL TRADE
AND AIRBORNE TRADE
(Unit in HK$million)

	Total Freight	Air Freight	% of International Freight That Carried by Air
		1969	
Import	14,893.0	1,569.6	10.5%
Export	10,518.0	2,026.9	19.3%
Re-export	2,679.1	551.0	20.6%
Total	28,090.1	4,147.5	14.8%
		1970	
Import	17,606.7	2,067.9	11.7%
Export	12,346.5	2,549.9	20.6%
Re-export	2,891.6	684.0	23.7%
Total	32,844.8	5,301.8	16.1%
		1971	
Import	20,256.2	2,469.4	12.2%
Export	13,749.8	2,555.3	18.6%
Re-export	3,414.4	892.9	26.1%
Total	37,420.4	5,917.6	15.8%
		1972	
Import	21,763.9	2,762.2	12.7%
Export	15,245.2	2,676.3	17.6%
Re-export	4,154.4	1,178.3	28.4%
Total	41,163.5	6,616.8	16.1%
		1973	
Import	29,004.6	3,964.5	13.7%
Export	19,474.4	3,364.4	17.3%
Re-export	6,525.0	1,889.1	30.0%
Total	55,004.0	9,218.0	16.8%

Source: Hong Kong Census and Statistics Department, Hong Kong External Trade (Hong Kong: The Government Press, 1969, 1971, 1972, 1973)

APPENDIX G

COMMODITY PATTERN OF AIRBORNE EXPORTS
(MAJOR SITC GROUPS)

Selected Groups	1970		1971		1972		1973	
	HK$ Mn.	% of total by air	HK$ Mn.	% of total by air	HK$ Mn.	% of total by air	HK$ Mn.	% of total by air
Clothing (expect fur clothing)	701.8	27.5	909.1	35.6	1,082.0	40.4	1,196.5	35.6
Other electrical machinery and apparatus	517.2	20.3	532.5	20.8	698.9	26.1	974.8	29.0
Miscellaneous manufactured articles	914.4	35.9	519.8	20.3	231.2	8.6	126.7	3.8
Watches and clocks	89.8	3.5	125.7	4.9	150.3	5.6	241.2	7.2
Jewellery and goldsmiths' and silversmiths' wares	68.2	2.7	92.1	3.6	129.2	4.8	237.0	7.0
Telecommunications apparatus	56.1	2.2	105.8	4.1	92.8	3.5	116.5	3.5
Pearls, precious and semi-precious stones	59.2	2.3	78.0	3.1	80.7	3.0	106.0	3.2
Perambulators, toys, games and sporting goods	41.3	1.6	63.4	2.5	36.5	1.4	40.0	1.2
Others	101.9	4.0	128.9	5.1	174.7	6.6	325.7	9.5
Total	2,549.9	100.0	2,555.3	100.0	2,676.3	100.0	3,364.4	100.0

Source: HK Census & Statistics Department, Hong Kong External Trade (Hong Kong: The Government Press, 1969-1973)

APPENDIX H

COMMODITY PATTERN OF EXPORTS
(MAJOR SITC GROUPS)

Selected Groups	1971			1972		
	Total HK$ Mn.	by air		Total HK$ Mn.	by air	
		HK$ Mn.	% of group total		HK$ Mn.	% of group total
Clothing (except fur clothing)	5,462.9	909.1	16.6	6,109.2	1,082.0	17.7
Other electrical machinery and apparatus	634.8	532.5	83.9	809.9	698.9	86.3
Miscellaneous manufactured articles	1,174.0	519.8	44.3	942.6	231.2	24.5
Watches and clocks	175.1	125.7	71.8	201.8	150.3	74.5
Jewellery and goldsmiths' and silversmiths' wares	216.6	92.1	42.5	262.4	129.2	49.2
Telecommunications apparatus	854.6	105.8	12.4	1,083.0	92.8	8.6
Pearls, precious and semi-precious stones	82.7	78.0	94.3	85.3	80.7	94.6
Perambulators, toys, games and sporting goods	1,262.4	63.4	5.0	1,404.5	36.5	2.6
Others	3,886.7	128.9	3.3	4,346.5	174.7	4.0
Total	13,749.8	2,555.3	18.6	15,245.2	2,676.3	17.6

Source: Hong Kong Trade Development Council, Air Freight Industry in Hong Kong (Hong Kong: HK Trade Development Council, 1973).

APPENDIX I

HONG KONG TOTAL EXPORTS AND AIRBORNE EXPORTS TO MAJOR COUNTRIES

Major Countries	1970				1971			
	Total HK$ Mn.	By air			Total HK$ Mn.	By air		
		HK$ Mn.	per cent			HK$ Mn.	per cent	
			of total by air	of country total			of total by air	of country total
U.S.A.	5,190.3	1,491.0	58.5	28.7	5,708.3	1,542.0	60.3	27.0
U.K.	1,481.4	193.6	7.5	13.1	1,946.2	135.4	5.3	7.0
F. R. Germany	984.7	205.3	8.1	20.8	1,128.1	163.2	6.4	14.5
Japan	491.7	121.0	4.8	24.6	484.3	157.1	6.1	32.4
Singapore	280.3	34.2	1.3	12.2	332.3	49.0	1.9	14.7
Canada	389.3	65.7	2.6	16.9	483.8	57.2	2.2	11.8
Switzerland	118.3	32.7	1.3	27.6	131.7	40.7	1.6	30.9
Netherlands	215.8	36.1	1.4	16.7	249.6	35.6	1.4	14.3
Taiwan	147.1	36.7	1.4	24.9	212.5	61.1	2.4	28.8
Sweden	242.5	33.0	1.3	13.6	195.3	20.7	0.8	10.6
U. S. Ociania	51.4	18.0	0.7	35.0	57.0	23.3	0.9	40.9
France	49.4	13.3	0.5	26.9	72.3	24.7	1.0	34.2
Trucial States	29.5	8.5	0.3	28.8	39.0	22.3	0.9	57.2
Others	2,674.8	260.8	10.3	9.8	2,709.4	223.0	8.8	8.2
Total	12,346.5	2,549.9	100.0	20.7	13,749.8	2,555.3	100.0	18.6

Source: Hong Kong Census & Statistics Department, Hong Kong External Trade (Hong Kong: The Government Press, 1969, 1971, 1972, 1973).

APPENDIX I (CONT.)

HONG KONG TOTAL EXPORTS & AIRBORNE EXPORTS TO MAJOR COUNTRIES

Major Countries	1972				1973			
	Total HK$ Mn.	By Air			Total HK$ Mn.	By Air		
		HK$ Mn.	per cent			HK$ Mn.	per cent	
			of total by air	of country total			of total by air	of country total
U.S.A.	6,124.8	1,576.5	58.9	25.7	6,825.2	1,673.4	49.7	24.5
U.K.	2,195.0	217.5	8.1	9.9	2,814.5	274.2	8.2	9.7
F. R. Germany	1,524.7	198.2	7.4	13.0	1,902.0	250.9	7.5	13.2
Japan	479.6	120.0	4.5	25.0	1,064.9	239.2	7.1	22.5
Singapore	350.4	58.3	2.2	16.6	535.5	108.4	3.2	20.2
Canada	500.9	53.1	2.0	10.6	511.8	58.2	1.7	11.4
Switzerland	164.1	50.8	1.9	31.0	265.8	98.2	2.9	36.9
Netherlands	294.6	42.8	1.6	14.5	411.5	65.2	1.9	15.8
Taiwan	233.3	41.2	1.5	17.7	389.6	95.7	2.8	24.6
Sweden	253.5	31.3	1.2	12.3	323.9	31.9	1.0	9.8
U.S. Oceania	57.1	28.1	1.0	49.2	71.7	49.0	1.5	68.3
France	100.0	27.0	1.0	27.0	145.6	42.7	1.3	29.3
Trucial States	54.1	26.7	1.0	49.4	97.5	39.7	1.2	40.7
Others	2,913.1	204.8	7.7	7.0	4,114.9	337.7	10.2	8.2
Total	15,245.2	2,676.3	100.0	17.6	19,474.4	3,364.4	100.0	17.3

APPENDIX K

CONFIDENTIAL ID NO. _____

Lingnan Institute of Business Administration

The Chinese University of Hong Kong

HONG KONG AIR CARGO TRANSPORTATION SURVEY - 1974

NOTE: Any information you give us below will be kept strictly confidential. If you cannot or do not wish to answer any question among the following, please omit it and go on to the next one.

(Place "✓" in "☐" for your answer please.)

I Overall Situation

Q1. Type of company

- export firm ☐
- factory ☐
- others (please specify)_____ ☐

Q2. Number of employees

- less than 20 ☐
- 20 - 49 ☐
- 50 - 99 ☐
- 100 - 199 ☐
- 200 - 999 ☐
- 1000 and over ☐

Q3. Type of capital

- local capital ☐
- foreign capital ☐
- joint-venture ☐

Q4. Trading partners (CHECK WHICHEVER APPLIES)

- U.S.A. ☐
- U.K. ☐
- West Germany ☐
- Japan ☐
- Canada ☐
- Singapore ☐
- Others ☐

Q5. Commodities exported (CHECK WHICHEVER APPLIES)

- clothing (except fur clothing) ☐
- textile fabrics ☐
- toys and dolls ☐
- transistorized radios ☐
- manufactures of metal ☐
- artificial flowers ☐
- travel goods, handbags & similar articles ☐
- electronic components and parts for computers ☐
- transistors and diodes ☐
- watches and clocks ☐
- footwear ☐
- jewellery ☐
- pearls, precious and semi-precious stones ☐
- others (please specify) _____ ☐

Q6. Were your exports evenly distributed over the year?

- yes ☐
- no ☐

Q7. If NO, please specify the months in which your exports were concentrated.

- Jan ☐
- Feb ☐
- Mar ☐
- Apr ☐
- May ☐
- Jun ☐
- Jul ☐
- Aug ☐
- Sep ☐
- Oct ☐
- Nov ☐
- Dec ☐

Q8. Did you use air cargo transport this year?

- yes ☐
- no ☐

IF YES, PLEASE ANSWER THE FOLLOWING QUESTIONS.
IF NO, PLEASE SKIP TO QUESTION 12.

Q9. In terms of value, approximately what % of your total exports were transported by air this year?

- 5% or less ☐
- 6% - 20% ☐
- 21% - 40% ☐
- 41% - 60% ☐
- 61% - 80% ☐
- 81% - 95% ☐
- over 95% ☐

Q10. Were your air exports evenly distributed over the year?

- yes ☐
- no ☐

Q11. If NO, please specify the months in which your air exports were concentrated.

- Jan ☐
- Feb ☐
- Mar ☐
- Apr ☐
- May ☐
- Jun ☐
- Jul ☐
- Aug ☐
- Sep ☐
- Oct ☐
- Nov ☐
- Dec ☐

Q12. Rate all the following in terms of what you think are the advantages of air transportation.

	very important	important	not important
cheaper transportation charges	☐	☐	☐
cheaper loading charges	☐	☐	☐
cheaper unloading charges	☐	☐	☐
less storage cost	☐	☐	☐
less insurance	☐	☐	☐
less packing cost	☐	☐	☐
quicker capital turnover	☐	☐	☐
less transportation time	☐	☐	☐
frequent schedules	☐	☐	☐
more accurate in arrival time	☐	☐	☐
no trans shipment is needed	☐	☐	☐
better care	☐	☐	☐
easier documentation	☐	☐	☐
others (please specify) _____	☐	☐	☐

_____

II The Latest Shipment

Q13. What was the content of your latest shipment?

- clothing (except fur clothing) ☐
- textile fabrics ☐
- toys and dolls ☐
- transistorized radios ☐
- manufactures of metal ☐
- artificial flowers ☐
- travel goods, handbags and similar articles ☐
- electronic components and parts for computers ☐
- transistors and diodes ☐
- watches and clocks ☐
- footwear ☐
- jewellery ☐
- pearls, precious & semi-precious stones ☐
- others (please specify) _____ ☐

Q14. Where was the destination of that shipment?

- U.S.A. ☐
- U.K. ☐
- West Germany ☐
- Japan ☐
- Canada ☐
- Singapore ☐
- others ☐

Q15. Which kind of transport did you use for that shipment?

- air ☐
- sea ☐
- land ☐
- sea/air ☐
- sea/land ☐
- air/land ☐
- others (please specify)_____ ☐

Q16. Rate all the following reasons for choosing the transport mentioned above.

	very important	important	not important
cheaper transportation charge	☐	☐	☐
cheaper loading charges	☐	☐	☐
cheaper unloading charges	☐	☐	☐
less storage cost	☐	☐	☐
less insurance	☐	☐	☐
less packing cost	☐	☐	☐
quicker capital turnover	☐	☐	☐
less transportation time	☐	☐	☐
frequent schedules	☐	☐	☐
more accurate in arrival time	☐	☐	☐
no trans-shipment is needed	☐	☐	☐
better care	☐	☐	☐
easier documentation	☐	☐	☐
requested by the buyer	☐	☐	☐
usual practice	☐	☐	☐
others (please specify) ____	☐	☐	☐

_____

Q17. Who paid the transportation fee for that shipment?

- seller ☐
- buyer ☐
- both seller & buyer ☐
- others (please specify) _____ ☐

Q18. What were the terms of payment for that shipment?

- L.C. ☐
- D.P. ☐
- D.A. ☐
- Consignment ☐
- others (please specify)____ ☐

APPENDIX L1

THE USE OF AIR TRANSPORT BY TYPE OF COMPANY

Per Cent of Exports That Carried by Air	Export Firms		Factories	
	Number	Per Cent	Number	Per Cent
None	1	10.0	7	21.9
5% or less	2	20.0	7	21.9
6% - 20%	3	30.0	3	9.4
21% - 40%	2	20.0	3	9.4
41% - 60%	0	0.0	1	3.1
61% - 80%	0	0.0	0	0.0
81% - 95%	1	10.0	1	3.1
Over 95%	1	10.0	10	31.2
Total	10	100.0	32	100.0

APPENDIX I.2

THE USE OF AIR TRANSPORT BY SIZE OF COMPANY
- EXPORT FIRMS

Per Cent of Exports That Carried by Air	Under 20 employees		20 - 49 employees		50 - 99 employees		Over 99 employees	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
None	0	0.0	1	25.0	0	0.0	0	0.0
5% or less	0	0.0	0	0.0	1	33.3	1	50.0
6% - 20%	1	100.0	1	25.0	1	33.3	0	0.0
21% - 40%	0	0.0	1	25.0	0	0.0	1	50.0
41% - 60%	0	0.0	0	0.0	0	0.0	0	0.0
61% - 80%	0	0.0	0	0.0	0	0.0	0	0.0
81% - 95%	0	0.0	1	25.0	0	0.0	0	0.0
Over 95%	0	0.0	0	0.0	1	33.3	0	0.0
Total	1	100.0	4	100.0	3	100.0	2	100.0

APPENDIX L3

THE USE OF AIR TRANSPORT BY SIZE OF COMPANY
- FACTORIES

Per Cent of Exports That Carried by Air	Under 200 employees		200 - 999 employees		Over 999 employees	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
None	4	22.2	0	0.0	3	30.0
5% or less	3	16.7	0	0.0	4	40.0
6% - 20%	2	11.1	1	25.0	0	0.0
21% - 40%	3	16.7	0	0.0	0	0.0
41% - 60%	0	0.0	1	25.0	0	0.0
61% - 80%	0	0.0	0	0.0	0	0.0
81% - 95%	1	5.6	0	0.0	0	0.0
Over 95%	5	27.8	2	50.0	3	30.0
Total	18	100.0	4	100.0	10	100.0

APPENDIX L4

THE USE OF AIR TRANSPORT BY TYPE OF CAPITAL
- EXPORT FIRMS

Per Cent of Exports That Carried by Air	Local Capital		Foreign Capital	
	Number	Per Cent	Number	Per Cent
None	1	14.3	0	0.0
5% or less	1	14.3	1	50.0
6% - 20%	3	42.9	0	0.0
21% - 40%	1	14.3	1	50.0
41% - 60%	0	0.0	0	0.0
61% - 80%	0	0.0	0	0.0
81% - 95%	0	0.0	0	0.0
Over 95%	1	14.3	0	0.0
Total	7	100.0	2	100.0

APPENDIX L5

THE USE OF AIR TRANSPORT BY TYPE OF CAPITAL
- FACTORIES

Per Cent of Exports That Carried by Air	Local Capital		Foreign Capital	
	Number	Per Cent	Number	Per Cent
None	6	25.0	1	12.5
5% or less	5	20.8	2	25.0
6% - 20%	3	12.5	0	0.0
21% - 40%	3	12.5	0	0.0
41% - 60%	1	4.2	0	0.0
61% - 80%	0	0.0	0	0.0
81% - 95%	1	4.2	0	0.0
Over 95%	5	20.8	5	62.5
Total	24	100.0	8	100.0

APPENDIX L6

THE USE OF AIR TRANSPORT BY EXPORT DISTRIBUTION PATTERN - FACTORIES

Per Cent of Exports That Carried by Air	Factory with evenly distributed exports		Factory with unevenly distributed exports	
	Number	Per Cent	Number	Per Cent
None	5	23.8	2	18.2
5% or less	3	14.3	4	36.4
6% - 20%	2	9.5	1	9.1
21% - 40%	3	14.3	0	0.0
41% - 60%	0	0.0	1	9.1
61% - 80%	0	0.0	0	0.0
81% - 95%	1	4.8	0	0.0
Over 95%	7	33.3	3	27.3
Total	21	100.0	11	100.0

APPENDIX L7

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY TYPE OF COMPANY

	Export Firms						Factories					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transport. charges	1	10.0	0	0.0	9	90.0	4	12.5	3	9.4	25	78.1
cheaper loading charges	0	0.0	2	20.0	8	80.0	3	9.4	6	18.7	23	71.9
cheaper unloading charges	0	0.0	1	10.0	9	90.0	1	3.1	6	18.7	25	78.1
less storage cost	1	10.0	2	20.0	7	70.0	2	6.2	7	21.9	23	71.9
less insurance	0	0.0	0	0.0	10	100.0	3	9.4	3	9.4	26	81.2
less package cost	1	10.0	1	10.0	8	80.0	2	6.2	5	15.6	25	78.1
quicker capital turnover	5	50.0	2	20.0	3	30.0	13	40.6	9	28.1	10	31.3
less transportantion time	10	100.0	0	0.0	0	0.0	24	75.0	4	12.5	4	12.5
frequent schedules	5	50.0	4	40.0	1	10.0	15	46.9	8	25.0	9	28.1
more accurate in arrival time	4	40.0	4	40.0	2	20.0	18	56.2	5	15.6	9	28.1
no trans-shipment is needed	2	20.0	2	20.0	6	60.0	3	9.4	5	15.6	24	75.0
better care	4	40.0	3	30.0	3	30.0	9	28.1	10	31.3	13	40.6
easier documentation	1	10.0	2	20.0	7	70.0	3	9.4	6	18.7	23	71.9

APPENDIX L8

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY SIZE OF COMPANY - EXPORT FIRMS

	Under 20 Employees						20-49 Employees					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charge	0	0.0	0	0.0	1	100.0	1	25.0	0	0.0	3	75.0
cheaper loading charges	0	0.0	0	0.0	1	100.0	0	0.0	1	25.0	3	75.0
cheaper unloading charges	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	4	100.0
less storage cost	0	0.0	0	0.0	1	100.0	1	25.0	1	25.0	2	50.0
less insurance	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	4	100.0
less packing cost	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	4	100.0
quicker capital turnover	1	100.0	0	0.0	0	0.0	1	25.0	1	25.0	2	50.0
less transportation time	1	100.0	0	0.0	0	0.0	4	100.0	0	0.0	0	0.0
frequent schedules	0	0.0	1	100.0	0	0.0	2	50.0	1	25.0	1	25.0
more accurate in arrival time	0	0.0	0	0.0	1	100.0	1	25.0	2	50.0	1	25.0
no trans-shipment is needed	0	0.0	0	0.0	1	100.0	1	25.0	1	25.0	2	50.0
better care	0	0.0	0	0.0	1	100.0	2	50.0	2	50.0	0	0.0
easier documentation	0	0.0	0	0.0	1	100.0	0	0.0	1	25.0	3	75.0

APPENDIX L8 (CONT.)

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY SIZE OF COMPANY - EXPORT FIRMS

	50- 99 Employees						Over 99 Employees					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charges	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	2	100.0
cheaper loading charges	0	0.0	0	0.0	3	100.0	0	0.0	1	50.0	1	50.0
cheaper unloading charges	0	0.0	0	0.0	3	100.0	0	0.0	1	50.0	1	50.0
less storage cost	0	0.0	1	33.3	2	66.7	0	0.0	0	0.0	2	100.0
less insurance	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	2	100.0
less packing cost	0	0.0	1	33.3	2	66.7	1	50.0	0	0.0	1	50.0
quicker capital turnover	2	66.7	1	33.3	0	0.0	1	50.0	0	0.0	1	50.0
less transportation time	3	100.0	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0
frequent schedules	1	33.3	2	66.7	0	0.0	2	100.0	0	0.0	0	0.0
more accurate in arrival time	2	66.7	1	33.3	0	0.0	1	50.0	1	50.0	0	0.0
no trans-shipment is needed	1	33.3	0	0.0	2	66.7	0	0.0	1	50.0	1	50.0
better care	1	33.3	1	33.3	1	33.3	1	50.0	0	0.0	1	50.0
easier documentation	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0	2	100.0

APPENDIX L9

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY SIZE OF COMPANY - FACTORIES

	Under 200 Employees						200-999 Employees					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charge	1	5.6	0	0.0	17	94.4	1	25.0	1	25.0	2	50.0
cheaper loading charges	2	11.1	2	11.1	14	77.8	0	0.0	2	50.0	2	50.0
cheaper unloading charges	0	0.0	3	16.7	15	83.3	0	0.0	1	25.0	3	50.0
less storage cost	1	5.6	5	27.7	12	66.7	0	0.0	0	0.0	4	100.0
less insurance	2	11.1	2	11.1	14	77.8	0	0.0	0	0.0	4	100.0
less packing cost	1	5.6	4	22.2	13	72.2	0	0.0	0	0.0	4	100.0
quicker capital turnover	7	39.0	5	27.7	6	33.3	2	50.0	2	50.0	0	0.0
less transportation time	12	66.7	3	16.7	3	16.7	3	75.0	1	25.0	0	0.0
frequent schedules	8	44.5	4	22.2	6	33.3	2	50.0	2	50.0	0	0.0
more accurate in arrival time	8	44.5	4	22.2	6	33.3	3	75.0	0	0.0	1	25.0
no trans-shipment is needed	1	5.6	1	5.6	16	88.8	1	25.0	1	25.0	2	50.0
better care	4	22.2	5	27.7	9	50.0	2	50.0	2	50.0	0	0.0
easier documentation	2	11.1	4	22.2	12	66.7	0	0.0	1	25.0	3	75.0

APPENDIX L9 (CONT.)

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY SIZE OF COMPANY - FACTORIES

	Over 999 Employees					
	very import.		important		not import.	
	No.	%	No.	%	No.	%
cheaper transportation charges	2	20.0	2	20.0	6	60.0
cheaper loading charges	1	10.0	2	20.0	7	70.0
cheaper unloading charges	1	10.0	2	20.0	7	70.0
less storage cost	1	10.0	2	20.0	7	70.0
less insurance	1	10.0	1	10.0	8	80.0
less packing cost	1	10.0	1	10.0	8	80.0
quicker capital turnover	4	40.0	2	20.0	4	40.0
less transportation time	9	90.0	0	0.0	1	10.0
frequent schedules	5	50.0	2	20.0	3	30.0
more accurate in arrival time	7	70.0	1	10.0	2	20.0
no trans-shipment is needed	1	10.0	3	30.0	6	60.0
better care	3	30.0	3	30.0	4	40.0
easier documentation	1	10.0	1	10.0	8	80.0

APPENDIX L10

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY TYPE OF CAPITAL - EXPORT FIRMS

	Local Capital						Foreign Capital					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charge	0	0.0	0	0.0	7	100.0	0	0.0	0	0.0	2	100.0
cheaper loading charges	0	0.0	1	14.3	6	85.7	0	0.0	0	0.0	2	100.0
cheaper unloading charges	0	0.0	1	14.3	6	85.7	0	0.0	0	0.0	2	100.0
less storage cost	0	0.0	2	28.6	5	71.4	0	0.0	0	0.0	2	100.0
less insurance	0	0.0	0	0.0	7	100.0	0	0.0	0	0.0	2	100.0
less packing cost	1	14.3	1	14.3	5	71.4	0	0.0	0	0.0	2	100.0
quicker capital turnover	4	57.1	2	28.6	1	14.3	1	50.0	0	0.0	1	50.0
less transportation time	7	100.0	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0
frequent schedules	3	42.9	3	42.9	1	14.3	2	100.0	0	0.0	0	0.0
more accurate in arrival time	2	28.6	3	42.9	2	28.6	1	50.0	1	50.0	0	0.0
no trans-shipment is needed	1	14.3	2	28.6	4	57.1	1	50.0	0	0.0	1	50.0
better care	2	28.6	3	42.9	2	28.6	1	50.0	0	0.0	1	50.0
easier documentation	0	0.0	1	14.3	6	85.7	1	50.0	0	0.0	1	50.0

APPENDIX L11

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY TYPE OF CAPITAL - FACTORIES

	Local Capital						Foreign Capital					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charge	2	8.3	1	4.2	21	87.5	2	25.0	2	25.0	4	50.0
cheaper loading charges	3	12.5	4	16.7	17	70.8	0	0.0	2	25.0	6	75.0
cheaper unloading charges	1	4.2	4	16.7	19	79.2	0	0.0	2	25.0	6	75.0
less storage cost	2	8.3	5	20.8	17	70.8	0	0.0	2	25.0	6	75.0
less insurance	3	12.5	2	8.3	19	79.2	0	0.0	1	12.5	7	87.5
less packing cost	2	8.3	4	16.7	18	75.0	0	0.0	1	12.5	7	87.5
quicker capital turnover	9	37.5	7	29.2	8	33.3	4	50.0	2	25.0	2	25.0
less transportation time	18	75.0	3	12.5	3	12.5	6	75.0	1	12.5	1	12.5
frequent schedules	11	45.8	6	25.0	7	29.2	4	50.0	2	25.0	2	25.0
more accurate in arrival time	13	54.2	4	16.7	7	29.2	5	62.5	1	12.5	2	25.0
no trans-shipment is needed	3	12.5	2	8.3	19	79.2	0	0.0	3	37.5	5	62.5
better care	6	25.0	7	29.2	11	45.8	3	37.5	3	37.5	2	25.0
easier documentation	2	8.3	5	20.8	17	70.8	1	12.5	1	12.5	6	75.0

APPENDIX L12

THE OPINIONS ABOUT THE ADVANTAGES OF AIR TRANSPORTATION BY EXPORT DISTRIBUTION PATTERN - FACTORIES

	Evenly Distributed						Unevenly Distributed					
	very import.		important		not import.		very import.		important		not import.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
cheaper transportation charge	4	19.0	3	14.3	14	66.7	0	0.0	0	0.0	11	100.0
cheaper loading charges	2	9.5	4	19.0	15	71.4	1	9.1	2	18.2	8	72.7
cheaper unloading charges	1	4.8	4	19.0	16	76.2	0	0.0	2	18.2	9	81.8
less storage cost	1	4.8	3	14.3	17	81.0	1	9.1	4	36.4	6	54.5
less insurance	2	9.5	2	9.5	17	81.0	1	9.1	1	9.1	9	81.8
less packing cost	1	4.8	3	14.3	17	81.0	1	9.1	2	18.2	8	72.7
quicker capital turnover	7	33.3	7	33.3	7	33.3	6	54.5	2	18.2	3	27.3
less transportation time	16	76.2	3	14.3	2	9.5	8	72.7	1	9.1	2	18.2
frequent schedules	10	47.6	5	23.8	6	28.6	5	45.5	3	27.3	3	27.3
more accurate in arrival time	13	61.9	3	14.3	5	23.8	5	45.5	2	18.2	4	36.4
no trans-shipment is needed	3	14.3	5	23.8	13	61.9	0	0.0	0	0.0	11	100.0
better care	7	33.3	8	38.1	6	28.6	2	18.2	2	18.2	7	63.6
easier documentation	2	9.5	4	19.0	15	71.4	1	9.1	2	18.2	8	72.7

APPENDIX L13

USE OF DIFFERENT TYPES OF TRANSPORTATION MEANS BY COMMODITY TYPE

Commodity	Air-Air/Land		Sea-Sea/Land		Sea/Air		Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
Clothing (except furs)	5	38.5	7	53.9	1	7.7	13
Textile fabrics	2	25.0	6	75.0	0	0.0	8
Toys and dolls	1	25.0	3	75.0	0	0.0	4
Transistorized radios	0	0.0	4	100.0	0	0.0	4
Manufactures of metal	0	0.0	1	50.0	1	50.0	2
Artificial flowers	0	0.0	3	100.0	0	0.0	3
Travel goods, handbags and similar articles	1	100.0	0	0.0	0	0.0	1
Electronic components and parts for computers	6	100.0	0	0.0	0	0.0	6
Transistors and diodes	1	100.0	0	0.0	0	0.0	1
Watches and clocks	4	100.0	0	0.0	0	0.0	4
Footwear	1	33.3	2	66.7	0	0.0	3
Jewellery	2	66.7	1	33.3	0	0.0	3
Pearls, precious & semi-precious stones	3	100.0	0	0.0	0	0.0	3

APPENDIX L14

USE OF DIFFERENT TYPES OF TRANSPORTATION MEANS BY DESTINATION

Destination	Air-Air/Land		Sea-Sea/Land		Sea/Air		Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
U.S.A.	11	61.1	6	33.3	1	5.6	18
U.K.	3	37.5	5	62.5	0	0.0	8
West Germany	1	14.3	5	71.4	1	14.3	7
Canada	1	33.3	2	66.7	0	0.0	3
Others	4	66.7	2	33.3	0	0.0	6

APPENDIX L15

USE OF DIFFERENT TYPES OF TRANSPORTATION MEANS BY PAYER

Payer	Air-Air/Land		Sea-Sea/Land		Sea/Air		Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
Seller	7	36.8	12	63.2	0	0.0	19
Buyer	11	52.4	8	38.1	2	9.5	21
Both Seller and Buyer	2	100.0	0	0.0	0	0.0	2

APPENDIX L16

USE OF DIFFERENT TYPES OF TRANSPORTATION
MEANS BY TERMS OF PAYMENT

Terms of Payment	Air-Air/Land		Sea-Sea/Land		Sea/Air		Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
L.C.	4	23.5	11	64.7	2	11.8	17
D.P.	8	72.7	3	27.3	0	0.0	11
D.A.	2	33.3	4	66.7	0	0.0	6
Consignment	3	75.0	1	25.0	0	0.0	4
Open-account	3	100.0	0	0.0	0	0.0	3

APPENDIX L17

THE REASONS FOR CHOICE OF AIR-AIR/LAND TRANSPORTATION

Reasons	Very Important		Important		Not Important	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
cheaper transportation charges	1	5.0	1	5.0	18	90.0
cheaper loading charges	2	10.0	3	15.0	15	75.0
cheaper unloading charges	1	5.0	0	0.0	19	95.0
less storage cost	3	15.0	1	5.0	16	80.0
less insurance	3	15.0	0	0.0	17	85.0
less packing cost	2	10.0	2	10.0	16	80.0
quicker capital turnover	8	40.0	3	15.0	9	45.0
less transportation time	15	75.0	0	0.0	5	25.0
frequent schedules	10	50.0	3	15.0	7	35.0
more accurate in arrival time	14	70.0	1	5.0	5	25.0
no trans-shipment is needed	3	15.0	2	10.0	15	75.0
better care	7	35.0	6	30.0	7	35.0
easier documentation	5	25.0	5	25.0	10	50.0
requested by the buyer	12	60.0	1	5.0	7	35.0
usual practice	4	20.0	3	15.0	13	65.0

APPENDIX L18

THE REASONS FOR CHOICE OF SEA-SEA/LAND TRANSPORTATION

Reasons	Very Important		Important		Not Important	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
cheaper transportation charges	17	85.0	2	10.0	1	5.0
cheaper loading charges	3	15.0	8	40.0	9	45.0
cheaper unloading charges	2	10.0	7	35.0	11	55.0
less storage cost	0	0.0	4	20.0	16	80.0
less insurance	0	0.0	4	20.0	16	80.0
less packing cost	1	5.0	2	10.0	17	85.0
quicker capital turnover	1	5.0	2	10.0	17	85.0
less transportation time	0	0.0	1	5.0	19	95.0
frequent schedules	0	0.0	9	45.0	11	55.0
more accurate in arrival time	1	5.0	4	20.0	15	75.0
no trans-shipment is needed	0	0.0	4	20.0	16	80.0
better care	1	5.0	2	10.0	17	85.0
easier documentation	0	0.0	3	15.0	17	85.0
requested by the buyer	6	30.0	6	30.0	8	40.0
usual practice	4	20.0	6	30.0	10	50.0

APPENDIX L19

THE REASONS FOR CHOICE OF SEA/AIR TRANSPORTATION

Reasons	Very Important		Important		Not Important	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
cheaper transportation charges	0	0.0	1	50.0	1	50.0
cheaper loading charges	0	0.0	1	50.0	1	50.0
cheaper unloading charges	0	0.0	1	50.0	1	50.0
less storage cost	0	0.0	0	0.0	2	100.0
less insurance	0	0.0	0	0.0	2	100.0
less packing cost	0	0.0	0	0.0	2	100.0
quicker capital turnover	0	0.0	0	0.0	2	100.0
less transportation time	1	50.0	0	0.0	1	50.0
frequent schedules	1	50.0	0	0.0	1	50.0
more accurate in arrival time	1	50.0	0	0.0	1	50.0
no trans-shipment is needed	0	0.0	0	0.0	2	100.0
better care	1	50.0	0	0.0	1	50.0
easier documentation	0	0.0	0	0.0	2	100.0
requested by the buyer	2	100.0	0	0.0	0	0.0
usual practice	0	0.0	0	0.0	2	100.0

LIST OF REFERENCES

1. Air Canada, and others. Cargo Air Tariff. Air Canada, and others, 1974.

2. Donne, Michael. "Air Cargo and Its World Potential." South China Morning Post. Feb. 18, 1975.

3. Flying Tiger Line Inc. Introducing The Tiger Freight Master. Los Angeles: Flying Tiger Line Inc.

4. Hong Kong Census and Statistics Department. Hong Kong External Trade. Hong Kong: Hong Kong Government Press, 1969-1973.

5. Hong Kong Census and Statistics Department. Hong Kong Statistics 1947-1967. Hong Kong: Hong Kong Government Press, 1969.

6. Hong Kong Census and Statistics Department. Hong Kong Monthly Digest of Statistics. Hong Kong: Hong Kong Government Press, 1971-1974.

7. Hong Kong Civil Aviation Department. Annual Departmental Report. Hong Kong: Hong Kong Government Press, 1946-1950, 1952-1974.

8. Hong Kong Government. Hong Kong Annual Report. Hong Kong: Hong Kong Government Press, 1970-1974.

9. Hong Kong Trade Development Council. Air Freight Industry in Hong Kong. Hong Kong: Hong Kong Trade Development Council, 1973.

10. Japan Air Lines Co., Ltd. JAL Air Cargo Guide. Japan Air Lines Co., Ltd.

11. Japan Line. Japan Line' 74. Tokyo: Japan Line, 1975.

12. Yates, John V., ed. The International Year Book and Statemen's Who's Who. London: Burke's Peerage Limited, 1973.

SELECTED BIBLIOGRAPHY

Books

Canfield, Bertrand R. Sales Administration Principles and Problems. New York: Prentice-Hall, 1957.

Cooper, Edward Horace. Introduction to Economic Geography. London: University Tutorial Press Ltd., 1968.

Farris, Martin T. and Mcelhiney, Paul L., ed. Modern Transportation. Boston: Houghton Mifflin Company, 1973.

Flying Tiger Line Inc. Flying Tiger in Hong Kong. Hong Kong: Flying Tiger Line Inc.

Flying Tiger Line Inc. Introducing The Tiger Freight Master. Los Angeles: Flying Tiger Line Inc.

Flying Tiger Line Inc. Taking Off with Flying Tiger. Los Angeles: Flying Tiger Line Inc.

Hong Kong Government Information Services Department. Hong Kong Airport. Hong Kong: Hong Kong Government Press, 1962.

Inch, John. Economic Geography for Professional Students. London: Sir. Isaac Pitman and Sons Ltd., 1968.

Japan Air Lines Co., Ltd. JAL Air Cargo Guide. Japan Air Lines Co., Ltd.

MacDonald, Philip. Practical Exporting and Importing. New York: The Ronald Press Company, 1959.

Phillips and Duncan. Marketing -- Principles and Methods. Homewood: Irwin, 1955.

Stamp, L. Dudley. A Commercial Geography. London: Longman Group Limited, 1973.

Smith, J. Russell; Phillips, M. Ogden; and Smith, Thomas R. Industrial and Commercial Geography. New York: Holt, Rinehart and Winston, 1960.

Report

Hong Kong Trade Development Council. Air Freight Industry in Hong Kong. Hong Kong: Hong Kong Trade Development Council, 1973.

Year Books & Statistics

Air Canada, and others. Cargo Air Tariff. Air Canada, and others, 1974.

Flying Tiger Corporation. The Flying Tiger Corporation Annual Report. Los Angeles: The Flying Tiger Corporation, 1974.

Hong Kong Census and Statistics Department. Hong Kong External Trade. Hong Kong: Hong Kong Government Press, 1969-1973.

Hong Kong Census and Statistics Department. Hong Kong Statistics 1947-1967. Hong Kong: Hong Kong Government Press, 1969.

Hong Kong Census and Statistics Department. Hong Kong Monthly Digest of Statistics. Hong Kong: Hong Kong Government Press, 1971-1974.

Hong Kong Civil Aviation Department. Annual Departmental Report. Hong Kong: Hong Kong Government Press, 1946-1950, 1952-1974.

Hong Kong Government. Hong Kong Annual Report. Hong Kong: Hong Kong Government Press, 1970-1974.

Japan Line. Japan Line' 74. Tokyo: Japan Line, 1975.

Yates, John V., ed. The International Year Book and Statesmen's Who's Who. London: Burke's Peerage Limited, 1973.

Articles in Newspapers

Clarke, R.L. "Air Freight Up Despite The Recession." South China Morning Post. Feb. 18, 1975.

Donne, Michael. "Air Cargo and Its World Potential." South China Morning Post. Feb. 18, 1975.

Editorial. "The Hidden Economics of Air Freighting." South China Morning Post. Feb. 18, 1975.

Editorial. "Fly Me -- I'm Broke." South China Morning Post. Feb. 17, 1975.

Editorial. "Increased Freight Handling Likely at Kai Tak." South China Morning Post. Feb. 18, 1975.

Sharma, Suresh. "Increased Freight Rates and The Impact on Hong Kong Shippers." South China Morning Post. Feb. 18, 1975.

香港航空貨運之研究——特別着重其與海運之競爭

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航空貨運是一種最新、同時發展最迅速的貨物運輸方式。本論文之目的在探討香港現時航空貨運之概況及其與海運之競爭情形，從而推測其將來之發展。

航空貨運事業主要由航空公司（AIRLINE COMPANY）及航空貨運公司（AIR FREIGHT AGENT）組成。航空公司之業務，主要是代付貨者將貨物以飛機運往收貨地點或收貨人手中，此種運輸包括兩種方式：

(一)航空公司只負責將貨物由一處機場運往另一處機場，付貨者須將貨物運至機場，收貨者亦須在機場收取貨物。

(二)航空公司負責將貨物由付貨人之貨倉取出，運至機場，然後裝上飛機，貨物運至外地後，航空公司又負責將貨物從飛機卸下，然後運至收貨人手中。

航空公司除提供空運服務外，尚有其他服務，如貨物轉運，貨箱及倉庫租賃，貨物包裝，提供保險，及代向收貨人收其貨款等。

香港之航空貨運公司之業務主要有二：

(一) 貨運公司根據航空公司之收費及規則，代航空公司向顧客提供航空貨運服務，從而收取佣金。

(二) 貨運公司以自己之收費及規則為顧客空運貨物，將收集得之貨物包裝成一大件，然後以顧客之身份，委託航空公司代為運出。由於航空公司對較大件之貨物收費低，故貨運公司可以從中獲得利潤。

航空貨運公司之其他服務，包括為付貨人將貨物運往機場及幫助填寫出口文件等。

自等二次世界大戰結束後，香港航空貨運即開始迅速發展，其中以出口方面之發展尤為蓬勃。在戰爭結束初年

，即一九四七年，空運貨物總數量僅二百五十八公噸，其中一百零二公噸為出口貨物。經過二十多年的發展，現時香港空運貨物的總數量每年已超過十萬公噸，在一九七三年度中，空運貨物總數量為十萬零七百二十一公噸，則政府每年所徵收的空運貨物稅款，其中六萬多公噸為出口貨物。另一方面，空運貨物佔香港全部貨運數量之比重亦不斷增加，在一九四七年，香港之總對外貿易數量中，只有萬分之二採用空運；但在一九七三年，採用空運之貨物已增至千分之五。若從價值方面來看，則空運之貨物所佔之比重更大，在一九七三年，採用空運之貨物總值佔全部對外貿易總值百分之十六點八，此

一數字較許多國家為高，由此可見香港空運發展之速。

香港航空貨運能有此迅速發展，除因香港對外貿易增長迅速外，空運服務及飛機班次之改善亦為重要原因。在機場方面，自二次大戰後，香港機場不斷擴展，目前啟德機場已為一國際機場，其面積為伍百三十畝，跑道長一萬一千一百三十呎，且目前一切仍在擴展中。至於航空公司方面，大戰結束初年，只有三間航空公司在香港經營定期班機，往來於香港與中國、東南亞、及英國主要城市之間。至一九七四年，經營定期班機之航空公司已增至三十間，每星期約有九百九十餘班定期班機往來於香港與世界各

大城市之間。

香港空運出口之貨物種類與香港主要出口貨物大致相同，其中以成衣為最主要，其他重要者包括電器、鐘錶、及珠寶飾物等。香港空運貨物之主要市場為美國，約佔空運出口總值百分之五十，其他重要市場為英國、西德、日本及星加坡等地。

在空運與海運之競爭方面，目前空運貨物量仍較海運為低。空運唯一缺點在於收費高，通常約為海運收費之五至二十倍。但在間接運費方面，空運則常較海運為低。所謂間接運費，即除輪船公司或航空公司所收之直接運費外

，其他所有因運貨出口而須支付出之費用，如包裝、倉租、貨物搬運、及保險費等，均屬間接運費。由於空運快捷，同時對貨物照料不心，故在包裝及保險方面所費甚低；此外，由於飛機班次頻密，貨物通常可即日運出，不需存倉等候，故倉租及貨物搬運費亦較低。

快速省時是空運之最大優點；飛機飛行速度大，班次頻密，上落貨快捷，故貨物能於短時間內運至目的地，使廠家能根據外地之需求變動而立即改變生產方針。此外，存貨數量可以減少，資金流轉可以加快，因落伍而損失貨物之可能性亦減低。其他優點，尚包括較佳服務及對貨物

較不必照料等。

在今日競爭劇烈的社會中，時間的重要性愈來愈大，故空運亦愈來愈重要。近年經濟不景、通貨膨脹、以及油價劇增等因素，雖然大大影響整個航空業之發展，但若單從航空貨運來看，則影響並不大。回前世界航空貨運業仍維持一定之發展，一九七四年世界航空貨運增長率為百分之十六，由此可見航空貨運在今日社會之重要性。至於航空貨運業在香港將來之發展，主要受幾種因素影響：

(一)運費——由於空運之唯一缺點在於運費高，故無論海運或空運收運之改變，均足以影響此兩種貨運方式之相

對競爭地位。

(二)教育與宣傳——目前在香港，許多付貨者仍未能完全了解空運之好處，他們只是習慣性地使用海運，尤以大型廠家最為顯著。故此，航空公司必須對這些付貨者進行教育與宣傳，使他們完全明瞭空運之好處，從而考慮使用空運。

(三)服務——良好服務乃空運之重要德點之一，許多貨物採用空運只是為了需要小心照料，故此，空運必須維持良好之服務，才能有長遠之發展，除航空公司及航空貨運公司之服務外，良好之機場設備亦屬要點之一。

(四)貨易貨品種類與數量——空運特別適宜於那些需要快速運輸及不心照料之貨物，故將來香港之出口貨物種類及數量足以影響空運使用量之大小。

(五)香港之外國投資——從調查所得，香港之外資工廠使用空運較本資工廠為多，故將來若有較多之外資工廠設立，則香港之航空貨運可能更為發達。但這只是短暫情形，因此種差別可能只是由於許多本資工廠尚未完全了解空運好處所致，一旦他們了解之後，這種差別便不會存在，那時不論本資或外資工廠，只要他們的貨品適合空運，都會採用空運。